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**LOCATION AND EFFECTS
OF
WARTIME INDUSTRIAL EXPANSION
IN CANADA 1939-1944**

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**DEPARTMENT OF RECONSTRUCTION AND SUPPLY, OTTAWA
DIRECTORATE OF ECONOMIC RESEARCH**

[1945]

PREFACE

This study is in part complementary to the Government's White Paper on Employment and Income (April 1945). That Paper discussed policies aimed at extending opportunity, welfare and security among the Canadian people. Reconstruction, however, must begin from the conditions that have resulted from nearly six years of war. The aim of this study is to describe these conditions. It outlines the dimensions and effects upon the Canadian economy of the industrial expansion during the war, providing information in national and local terms for the different industrial sectors. It is against this background, as well as the vision of the future, that reconversion to a peacetime economy is to be considered.

The report consists of six sections: (1) an introductory chapter deals with the task ahead indicating the necessity for approaching re-employment problems on an "area" and "selected industries" basis; (2) the following chapter presents the problem and discusses the organization of the material and the scope of the study; (3) changes in the industrial pattern in national terms are discussed next; (4) the effect of interprovincial migration and industrial concentration is then described; (5) the effect of wartime industrial expansion on some of the principal industrial areas is discussed next; (6) the final chapter deals with some of the basic industries including iron and steel, aluminum, nickel, textiles, chemicals, automobiles and trucks. An appendix is attached providing summary tables of wartime industrial employment for selected industries, 1939-1944. Two charts providing detailed information on wartime expansion in industrial employment are enclosed in the pocket at the end of the report.

Industrial reconversion and re-employment are national matters, which call for policies that take into account the peculiarities of industrial development of different regions and localities in the country, giving due regard to the occupation shifts of workers and expansion of industrial facilities in various sectors of the economy. The need for considering employment in terms of "areas", "basic industries" and "occupations" is emphasized in this study. The report is factual and, therefore, does not include specific recommendations for employment policy. It portrays only the war expansion in industrial employment in Canada and leaves a survey of employment conditions during the reconversion period to a sequel report.

This study was initiated by the Advisory Committee on Reconstruction in 1942 together with a number of surveys and reports in accordance with the Committee's terms of reference to "collect, receive and arrange information with regard to reconversion policy and activities in Canada and abroad". When the Advisory Committee on Reconstruction completed its work toward the end of 1943, a compilation of wartime industrial employment statistics up to the middle of that year had been prepared. It was deemed desirable, however, to delay the preparation of the report until (a) war production in Canada had passed its peak and (b) a certain distance from the gigantic task of industrial adjustment for war allowed

proper appraisal of the re-employment problem which management and labour alike would face in the reconversion period. In terms of employment, Canada's peak of war production was reached in the last quarter of 1943. From 1944 onwards a gradual shift towards civilian employment took place, greatly speeded by the successful military events during the spring (V-E Day, May 8) and summer (V-J Day, August 14) of 1945. In drawing up this report, account was taken of extensive regional and occupational shifts in industrial employment during the war years after the peak of war production was passed in 1943 as well as the pattern of re-employment in civilian industry largely conditioned by changes that had occurred during the preceding almost six years of war.

Valuable help in providing published and unpublished data was received from a number of Dominion Government departments, particularly the Department of Labour, the Dominion Bureau of Statistics and the Department of Munitions and Supply. The task of developing the concept and the statistical presentation of the survey on which this report is based was undertaken by Dr. L.C. Marsh, the Research Advisor of the Advisory Committee on Reconstruction. Extensive statistical work connected with the survey was carried out by F. Leacy and H.W. Black. The report was prepared by the Directorate of Economic Research of the Department of Reconstruction under the supervision of Dr. O.J. Firestone, assisted by Miss B.A. Steinbach and Mr. S. Trachtenberg.

Ottawa, November 1, 1945.

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SUMMARY

Canada's manufacturing capacity has, during almost six years of war, increased at a rate unsurpassed in her history, hastening the process of industrialization that had been accomplished during the period between World War I and World War II. In 1919, agriculture was Canada's most important industry, contributing 44 per cent to the total net value of commodity production, amounting to \$3.3 billion, against 33 per cent for manufacturing. By 1939, this position was almost reversed with manufacturing contributing 39 per cent to the country's total net value of production of \$3.2 billion, as against 22 per cent for agriculture. By 1943, manufacturing had increased its lead to 54 per cent of the total of \$6.3 billion, while agriculture, in spite of very substantial contributions to feed millions of Canadians at home and allied nationals abroad, made up only 20 per cent of the net output. A similar trend is indicated for the remaining war years.

In Canada the most striking result of the war is the rapid expansion of productive capacity in manufacturing industry. Today Canada stands ready and equipped to produce more goods in more varieties than at any other previous period. The net value of production in manufacturing during the period 1939-1943 increased 167 percent; the number of employees increased 92 per cent while the payroll rose 160 per cent. This substantial expansion came from the contribution which Canadian industry made to the war effort of this country. Employment in war industry (employment on direct and indirect war production and construction, and the war content of employment in ancillary industries) reached a peak of 1,166,000 on October 1, 1943 and then began to taper off as war production programs were continuously curtailed. By V-E Day (May 8, 1945) employment in war industry had declined to 888,000 and on V-J Day (August 14, 1945) it stood at 600,000.

The war necessitated the establishment of new industries, new factories, shipyards and munitions plants; while many existing industries underwent marked expansion. Some industries with relatively small employment before the war attained such wartime development that it was tantamount to the creation of a new industry rather than the expansion of an old one. Advances were made in the production of finished goods and equipment, some of which were of a type quite

new to Canadian industry and had previously been imported from abroad. Much of this industrial expansion occurred in secondary industries, as in the rapid development of a Canadian tool-making industry, the growth of the chemical industry and the rapid expansion of aluminum production. While some munitions plants, because of their location or equipment, are proving to be of no value in peacetime production, the remaining increase in industrial productive capacity is available for economic utilization. The war then, as the result of the munitions program, saw the emergence of a vastly expanded industrial structure much of which it is intended to retain for peacetime use.

Up to V-J Day the government had spent \$706 million on industrial plant expansion, excluding tooling costs. Of this amount, 75 per cent represents investment in plants wholly owned by the Crown. It is estimated that two-thirds of this industrial capacity created during the war years can be put to good use for peacetime productive efforts. Of course, the present use-value of the original investment will be considerably less than two-thirds of the initial expenditure because of the need to allow for depreciation and obsolescence. An additional \$500 million of war industrial expansion was undertaken directly by private industry and represents the amount authorized under the War Exchange Conservation Act and by the War Contract Depreciation Board. Information available indicates that at least 70 per cent of this investment will have a postwar value.

Canadian manufacturing industries are planning to expand and produce many new lines, including at least one hundred major products never before manufactured in Canada. For example, end-products range from inter-city buses, prefabricated houses, glass fabrics and plastic products to a myriad of household articles. The development of the toy industry in Canada gives promise of an end to reliance on foreign countries. Primary materials and components of manufactured articles include ball and roller type bearings; polymer flake, an important material for nylon fabrics; special type yarns; synthetic resins; titanium dioxide for all types of paints. The list of new products includes medicines and chemicals as well as many types of plant machinery and equipment never before made in Canada.

The transition period of industrial reconversion presents two problems. The immediate problem is of a technical nature and relates to the reconversion of plant and equipment engaged in wartime production to use for peacetime

production. The second problem is one of a substantial re-alignment of the labour force and involves absorption into peacetime industry of demobilized service personnel and of workers who have been engaged in the manufacture of war goods. Absorption into civilian industry of former war workers in turn involves migration of industrial workers from wartime boom towns and from areas inflated in employment, due to war industries, to other areas and sources of employment. While this problem is proceeding to solve itself with the termination of war contracts and the shutting down of plants for re-tooling, it will extend into the future for a much longer period than will the process of technical reconversion.

The munitions, aircraft and, to a lesser extent, the shipbuilding industries are difficult to convert from war to peace; the automotive, metals, and miscellaneous industry group comprising such industries as lumber, food processing and textiles, are, on the other hand, fairly readily convertible. In munitions, aircraft and shipbuilding, where marked wartime expansion occurred, substantial declines in employment were registered as war contracts terminated. During the period May 1st to October 1st, 1945, employment in the munitions industry declined from 63,000 to 20,000, in the aircraft industry from 59,000 to 18,000 and in the shipbuilding industry from 64,000 to 44,000. The iron and steel, aluminum, chemical and abrasive industries whose productive capacity has increased extensively during the war years showed a much smaller decline in employment than the direct war manufacturing industries because in these fields decline of war employment was offset by expansion in civilian employment.

The absorptive capacity of the economy during the present period of re-adjustment is well indicated in many of the plants hitherto engaged on war contracts. In a large number of companies carrying out about 76 percent of war manufacturing, the decline in war employment between May 1st and September 1st of this year was off-set to the extent of 51 percent by an expansion of civilian employment. Such an expansion is significant in that in this segment of manufacturing are to be found the major problems of conversion and of non-convertible capacity; and also because a substantial shift from war work has been accomplished without the workers being obliged to change their place of employment. To the extent that such a shift takes place, dislocation is minimized.

Operation of the new industrial facilities and especially of manufacturing facilities at much higher levels than in 1939 will give employment to more workers than were employed in Canadian factories and in the trades dependent on them before the war. Some of this new industrial capacity will find outlets in the home market. Industrial expansion, however, has been on a scale that far exceeds the possibilities of domestic consumption, and markets abroad are necessary to keep Canadian industrial facilities operating at levels approaching their new capacity. A change can be expected, therefore, in the relative importance of the items comprising Canadian export trade, with manufactured products making a larger contribution to the total volume and value of export trade, and hence to the national level of employment and income. Imports have hitherto consisted largely of manufactured goods, but now with Canadian factories in a position to produce many of the things previously imported, raw materials and semi-processed items may become more important relatively as items in the volume and value of import trade.

During the war there were not only transfers of employment from one field to another but also from one region to another. Large inter-provincial migrations of workers led to substantial shifts in the geographical distribution of the population. The general direction of the exodus was mainly from the non-industrial regions to the industrial regions -- from the prairies to British Columbia and Ontario -- which were the main recipients of interprovincial migration. Quebec also contributed slightly to this migration while in the Maritimes, Prince Edward Island and New Brunswick contributed population to Nova Scotia. Within regions there has been a great movement of the population from rural to urban areas with the chief shift toward the large cities -- the metropolitan centres. The war speeded up the existing trends towards increased urbanization and the drift toward the industrialized sections of the country due to the greater job opportunities there as compared to the agricultural regions. During the period 1939 - 1944, Ontario, Quebec and British Columbia ranked highest in total employment with employment in war manufacturing chiefly concentrated in the highly industrialized areas of Ontario and Quebec and to a lesser extent in British Columbia and Nova Scotia. These provinces have the heaviest

concentration of the ~~inconvertible~~ segments of war manufacturing.

Summarizing, Canadian industry, grown in stature and capacity, has demonstrated in recent years the potentialities that lie in making full use of the resources (human and natural) of the country. If adequately utilized, the experiences gained, the techniques developed, the capacities created and the skills acquired in the field of manufacturing industry, hold promise for increased returns for the Canadian people in terms of raising their standard of living.

I. INTRODUCTION

1. The Task Ahead

The central task of reconstruction facing the Dominion Government in the post-war period is the maintenance of a high and stable level of employment and income. Attainment of this goal requires the effective working of closely integrated and compatible policies in the various sectors of the economy with all of the policies directed to the same end and each contributing to the success of the others. Implementation of these policies will give rise to many and varied problems which will have to be resolved.

A programme for the rehabilitation of Canadian agriculture has to be initiated. An adequate housing programme on a national basis is needed. A programme designed to ensure the most effective conservation and the maximum development of the country's natural resources must be evolved. A reserve of publicly financed investment projects must be planned and assembled. Successful operation of these programmes will result in the maintenance of a high level of employment and income in these sectors of the economy.

In the industrial field, provision of adequate employment opportunities is of especial and vital importance if attainment of the goal of the reconstruction policies and programmes for the country as a whole is to be assured. To a large extent, success of the whole programme of reconstruction relates to and revolves about the attainment of a high and stable level of industrial employment and income. Accordingly it is necessary to effect a smooth, orderly transition in industry from the economic conditions of war to those of peace so that this sector of the economy will be in a position to provide an adequate number of the jobs needed to attain a high level of employment in Canada.

The various sectors of the economy are closely inter-related and must be considered as an integrated whole. Economic conditions - prosperous or adverse - in any one sector react on and influence conditions in all other sectors. Successful operation of the program for each field must be achieved if success of the reconstruction programs for all fields is to be attained. Just as a high and stable level of employment and income in the industrial segment is essential to the maintenance of such levels in the other segments,

so too, high and stable levels of employment and income in these segments are essential to similar success in the industrial field. This economic interdependence and integration is well illustrated in the case of the heavy dependence (especially until the late 1920's) of the manufacturing and service industries of Eastern Canada on the agricultural export region of the Prairies. The Prairies specialized in the production of wheat for the international market while Ontario and Quebec specialized in providing goods and services for the national market. In turn, the world demand for wheat became the determining factor in the prosperity of the Prairie region and hence in the prosperity of Eastern Canada.

2. The Significance of Wartime Industrial Employment Statistics

To appraise properly the problems involved in the provision of adequate peacetime employment opportunities in manufacturing and other industry, it is necessary to know how the war has affected employment in these industries. While examination of the location and effects of wartime industrial employment and of wartime expansion in industrial employment can serve to indicate the importance and place of Canada's industrial war effort as a phase in the country's development, the purpose of this study is to indicate the dislocations and delays that are expected during the transition period since the termination of war contracts is not affecting all communities equally and simultaneously. Presentation of the data on wartime expansion of industrial employment (when used along with other pertinent information) can provide a guide to the relevant importance of the problems involved in re-employment as war production terminates and hence can make some contribution to the solution of the problems involved in maintenance of a high and stable level of industrial employment after the period of transition and readjustment.

The data presented in this survey are designed to give national and regional perspective to wartime industrial development and the expansion of employment. It provides descriptive, factual background material and forms the basis for further study and analysis. It has to be supplemented by other studies being done now of industrial areas and selected industries and is intended as a complement to such studies.

The transition period of industrial reconversion presents two problems. The immediate problem to be solved is of a technical nature and relates to the reconversion of plant and equipment engaged in wartime production to use for

peacetime production. This process of reconversion of industrial capacity released from war use involves reorganization and re-adaption of plant and equipment and will require a relatively short time for completion. The second problem is one of re-alignment of the labour force and involves migration of industrial workers from wartime boom towns and from areas inflated in employment, due to war industries, to other areas and sources of employment. While this problem is beginning to solve itself with the termination of war contracts and the shutting down of plants for re-tooling, it will extend into the future for a much longer period than will the process of technical reconversion.⁽¹⁾ The data presented here on wartime expansion of industrial employment on a regional or area basis can provide a guide to the magnitude of such expected migration.

3. Approach to Re-employment Problems on an Area Basis⁽²⁾

The complexity of the problems involved in re-employment may perhaps be seen best by study of those areas particularly subject to the incidence of loss of employment from war contract termination. The main change in the structure of the economy that is now taking place as the result of the shift from war production to other types of production is the transfer of war workers and of substantial numbers of members of the armed forces from war activity to civilian occupations. The problems associated in this change are local problems connected with shifts from one type of employment to another in the same employment area and from one area to another. These local problems are arising from: the heavy impact of cancellation of war contracts on communities in which the greatest concentrations of war industry had occurred, the cessation of expenditures on defence construction and the decline in expenditures occasioned by concentration of service personnel throughout the country, the time involved in conversion of certain industries and the fact that some segments of war

(1) It was to be expected that as the result of rapid expansion of war industries and contraction in the numbers employed in industries producing civilian goods for non-war purposes, a large number of workers, at the end of hostilities would be seeking new employment and transferring from one job to another. Transfer from a job in one area to another job in a different area may involve migration to another province or return to the former place of residence. As noted below, however, it is expected that those who have migrated to another province are not likely to return. Accordingly transfer from one job to another should largely involve obtaining employment in peacetime industry in the same area or in another area within the province.

(2) A few of the areas in which war employment was chiefly concentrated are examined in some detail in Section V, page 41.

industry so concentrated are inconvertible, the abnormal wartime population of the communities, the lack of diversification of civilian industry in some localities so that no alternative employment is available in that area for many of the displaced war workers, and finally from the resistance to transfer by labour.

The localities in which the above problems are greatest are being studied since it is in these localities "where wartime demands have necessitated heavy concentration of war orders and an abnormal wartime population" that there are taking place "unavoidable dislocation and delays" because "cancellation of war contracts" is falling "more heavily than elsewhere".⁽¹⁾ The studies being done on an area basis by the Directorate of Economic Research, Department of Reconstruction, are intended to indicate where and when action is required to meet these local situations, and what type of remedial action is appropriate in the circumstances.

The area studies are designed to permit continuing review of the current situation so that the emergence of re-employment problems, both as to the magnitude and the character of the problem, can be anticipated and action taken which has regard to those aspects of it which are peculiar to that locality. The problem of absorbing displaced war workers may be primarily one of a deficiency of alternative opportunities in the immediate area, or of lack of fit between the skills available and the skills likely to be required. Without a variety of background information on the character of war industry and the normal pattern of employment opportunities prior to the war it would be impossible to evaluate the level and the character of the demand for labour which is emerging as the locality adapts itself to the requirements of a peacetime economy.

The distribution of the industrial population is determined in the long run by the distribution of basic industries. Each locality possesses industries which are basic in the sense that the products of these industries are "exported" to domestic markets outside this locality. Thus employment in manufacturing in industrial centres, and in mining centres is key employment in the sense that it helps to determine the level of employment in services and trades. These industries are the foundation of the area's economy since without them the population in that locality would be limited to what could be maintained in a self-sufficing economy. It is the distribution of these industries which makes for a diversity of employment patterns. An im-

(1) The White Paper on Employment and Income, Ottawa, April, 1945.

portant part of studies on an area basis is the identification of a locality's basic industries, of their relative importance as compared with those industries which depend primarily upon the local market, and finally an evaluation of the prospects and problems of those basic industries. This last leads to an investigation of the advantages, either natural or man-made, which these basic industries possess in that locality which they would not possess in some other locality, and to the probable effect of technological developments and long-term trends in consumer demand upon a locality's basic industries.

A locality's existing industrial structure and potential or desirable changes in that structure are central to an analysis of its re-employment problem. A locality which produces a variety of producer and consumer goods will attract to itself spending power from outside and participate in whatever measure of prosperity exists in the economy as a whole. If industry is not diversified then the locality's problem will be the problems of its major industries. No two localities are identical in the totality of the problem although certain sectors of it may be common to several. A locality approach to the re-employment problem demands a constant shift of emphasis from one to another of its aspects.

4. Approach to Re-employment Problems by Study of Selected Basic Industries.

Most employment areas have certain major industries that form the basis of their industrial activity and prosperity. These industries are the chief sources of employment. This is illustrated best in the case of single industry towns where one industry provides the most important outlet for the labour supply of the area while the level of activity and employment in this industry determines in turn the levels of activity and employment in ancillary industries, trades and services. The problem of the single industry town is in fact the problem of the major industry located there. Information obtained from a careful, individual study of several important industries should indicate the problems peculiar to each industry in the period of transition from wartime to peacetime production as the industry converts to civilian output of goods (a technical problem may or may not be involved) and prepares to meet civilian demand at home or abroad (or both). Such information should also make it possible for the Government to evolve policies designed to facilitate the operation of those industries (and hence assist the areas in which they are located) which are capable of operating on an economic basis and which may require assistance to enable high-scale operation. Government policies evolved with particular re-

ference to such industries should serve as a framework within which these industries would successfully operate. Such policies could be designed to assist matters either by alleviating local distress through public projects, by moving people elsewhere, or by creating conditions under which private enterprise might restore prosperity to the industry. These policies would therefore assist in avoiding the emergence of depressed areas and would lend stability to single industry towns.

The munitions, aircraft, and to a lesser extent, the shipbuilding industries are difficult to convert from war to peace; the automotive, metals and miscellaneous industry group are, on the other hand, fairly readily convertible. In munitions, aircraft and shipbuilding where marked wartime expansion occurred⁽¹⁾, substantial declines in employment were registered as war contracts were terminated during the changeover to peacetime conditions. During the period May 1st to October 1st, 1945, employment in those firms classified as producing munitions declined from 63,000 to 20,000 while employment in the aircraft industry declined from 59,000 to 18,000 and in the shipbuilding industry from 64,000 to 44,000. The iron and steel, aluminum, chemical and abrasive industries whose productive capacity has increased extensively during the war years showed a much smaller decline in employment than the direct war manufacturing industries because in these fields decline of war employment was offset by expansion in civilian employment. In some sectors of the automotive industry, substantial unemployment may exist during the period of technical reconversion but once the latter is accomplished, existing productive facilities are likely to be used to capacity to meet the pent-up demands for the product of the industry. Operations of base metal industries are not likely to be curtailed to any considerable degree for some time to come though considerable shifts within the industry are probable because of the changed character of peacetime demands. Civilian requirements are not likely to replace war requirements for the products of these mines. On the other hand, if restrictions are lifted, it is probable that gold mining will expand and employ

(1) Manufacture of aircraft has taken place in approximately the same localities as before the war, but on a much larger scale. Shipbuilding has mushroomed from a very small industry to one of large proportion, the construction of cargo ships and smaller vessels taking place on the East and West Coasts, along the St. Lawrence and in the Great Lakes region.

many of the workers released from base metal mining. The miscellaneous industries group comprises such industries as lumber, food processing and textiles - industries which with the advent of peacetime conditions are now anticipating an increase in employment.

The problems of a few industries such as steel, aluminum, textiles, chemicals and abrasives which have been most affected by the war and in which a possible contraction may lead to regional depressions are discussed in Section VI. The main problem confronting these war-expanded industries is whether they can expect to hold their wartime increases and if so, how this is to be accomplished. It may be expected that in these industries the incidence of loss of employment on account of cancellation of war contracts would now increase.

5. Importance to Canada of Export Trade in Staple Products

In the past (the Canadian economy being one of the least self-sufficient in the world and hence vitally dependent for its prosperity upon trading in world markets its production of a few specialized resources for the commodities in which it is deficient), export trade (and income) in commodities has been a highly essential factor in the determination of the level of employment and income in Canada. There has been a close relationship between the level of exports and national income: over a long period, a high volume of exports at remunerative prices has coincided with a high level of income and vice versa. External sources of income and demand thus furnished an important dynamic element to internal activity.

Before the outbreak of war in 1939, the chief Canadian exports were primary staple products (surplus foodstuffs, processed and raw materials - only a small proportion of whose production was consumed domestically - and which constituted two-thirds of total exports) such as wheat and flour, newsprint, lumber, non-ferrous metals consisting of gold, nickel, copper and aluminum, meat, fish and dairy products.⁽¹⁾ The volume of export trade in these items was the

(1) In 1937 these commodities comprised nearly seventy per cent of total exports. Farm products predominated followed by forest products and metals. Some of these exports, such as newsprint and lumber, had undergone some process of manufacture. Prior to 1914, exports had consisted primarily of raw materials and semi-processed goods while imports were chiefly manufactured goods. Since then, although exports are still derived chiefly from the natural resources, they have increasingly consisted of products which have already undergone some degree of processing and are exported in more finished manufactured forms, while a larger proportion of the imports have been of raw and semi-manufactured products to be used by Canadian industry. This trend has been greatly accelerated by the recent war with the bulk of exports being fully finished war materials and foodstuffs.

key to the prosperity of agriculture and the other primary industries and the extent of adequate employment levels in these industries was directly dependent upon the volume of such goods marketed abroad. The Prairies, the Maritimes, a large part of Northern Ontario and Quebec, and British Columbia⁽¹⁾, in which the primary industries were located, were therefore primarily export areas whose people depended directly upon foreign markets for their livelihood. When export trade declined, their purchasing power fell and economic stagnation was diffused into those areas producing for the domestic market. Export trade while a potent stimulating force in the Canadian economy also rendered it more vulnerable in times of depressed trade conditions since unprofitable foreign prices meant there would be no alternative occupations for the people engaged in the highly specialized staple exporting industries.

6. Greater Potential Contribution to Export Trade of Increased Wartime Industrial Capacity

Today, with productive capacity (and particularly industrial capacity) so much greater than before the war, export trade is especially necessary for the full utilization of this capacity. Wartime needs gave rise to "a notable expansion of Canadian productive facilities in manufacturing, in agriculture, and in the production of raw materials".⁽²⁾ The economy became more greatly diversified and broadened. The war greatly accelerated the shift in the balance between agriculture and industry. A study of the emerging importance of industry in Canada can aid in assessing the possibilities of this increased industrial capacity with particular emphasis on its larger potential contribution to export trade and to a high level of employment throughout the country.

Since the end of the first World War manufactures have been assuming a greater role in the productive output of the country as compared to that of agriculture. This has been evident by the increasing proportion contributed by manufactures to the production of the country as measured by the net value of output.⁽³⁾

(1) Prior to 1914, there was one predominant export area, the Prairies, whose chief export was wheat. During the 1920's new important export staples emerged and assumed greater importance: newsprint and non-ferrous metals in Ontario and Quebec; lumber, non-ferrous metals, pulp and paper in British Columbia.

(2) Proposals of the Government of Canada, Dominion-Provincial Conference on Reconstruction, Ottawa, August, 1945.

(3) The following statistics are from Survey of Production in Canada, 1939, Dominion Bureau of Statistics, Ottawa, 1941. Net value of production represents an attempt to eliminate from the total value of all individual commodities produced in a particular industry (the gross value of production) the cost (or value) of materials, fuel, purchased electricity and process supplies consumed in the production process.

In 1919 agriculture contributed \$1,457,429,000 or 44 per cent to a total net value of production for the country of \$3,313,040,000 while manufacturing contributed \$1,095,601,000 or 33 per cent. For the next two years manufacturing contributed a larger share to net output than did agriculture. While agriculture regained its dominance in the following seven years, the net value of manufacturing production continued to increase during the period and was not far behind that of agriculture. By 1929 manufacturing was contributing \$1,428,733,000 or 39 per cent to a total net value of commodity output of \$3,658,485,000 as compared to agriculture's share of \$1,020,223,000 or 28 per cent. Since then manufacturing has furnished the larger proportion of the country's net production as manufacturing output has continued to lead that of agriculture in value. In 1939 manufacturing constituted \$1,277,265,000 or 39 per cent of a total net value of production of \$3,241,131,000 as against agriculture's share of \$826,390,000 or 22 per cent.

There was then, in the inter-war period, progress towards diversification of industry within Canada. Manufacturing came to play a relatively more important role than did agriculture in the productive life of the nation. The war just concluded sharply accentuated this greater importance of manufacturing over agriculture. By 1943 marked increases had been recorded by both manufacturing and agriculture with the former maintaining its pre-war lead in production. The net output of manufacturing had risen to \$3,405,712,000 or 54 per cent of a total commodity production of \$6,325,458,000 while that of agriculture amounted to \$1,245,843,000 or 20 per cent of total net output.

The most striking result of the war in Canada is to be found in the fact that within six years the entire economic and social picture has changed owing to the rapid expansion of productive capacity in manufacturing industry. Today Canada stands ready and equipped to produce more goods than at any other previous period. The net value of production in manufacturing during the period 1939-1943 increased 167 per cent; the number of employees increased 92 per cent while the payroll rose 160 per cent. (1) The war necessitated the establishment of new industries, new factories, shipyards and munitions plants; while many existing industries underwent tremendous expansion. Some industries with relatively small employment before the war attained such wartime development that it was tantamount to the creation of a new industry rather than the expansion of an old one. Great advances were made in the production of finished goods and equipment, some of which were of a type quite new to Canadian industry

(1) Part of the increase in the value of output and payrolls was due to a rise in prices and wages and salaries.

and had previously been imported from abroad.⁽¹⁾ Much of this industrial expansion occurred in secondary industries, examples of such expansion being the rapid development of a Canadian tool-making industry,⁽²⁾ the growth of the chemical industry and the rapid expansion of aluminum production. Even though some munitions plants because of their location or equipment are proving to be of no value in peacetime production, the remaining increase in industrial productive capacity is available for economic utilization. The war then, as the result of the munitions program, saw the emergence of a vastly expanded industrial structure (grown to more than twice its pre-war size) much of whose capacity it is intended to retain for use.

Operation of these industrial facilities especially of manufacturing facilities will give employment to more workers than were employed in Canadian factories and in the trades dependent on them before the war. "Some of this new capacity will find peacetime outlets in the home market. In many cases, however, the expansion has been on a scale that far exceeds the possibilities of domestic consumption"⁽³⁾ and markets abroad are necessary to keep Canadian industrial facilities operating at levels approaching their new capacity. The degree to which employment is maintained in this sector of the economy will become dependent then, to an increasing extent, as the backlog of domestic demand for producer and consumer goods is met and supplied, on a relatively high level of export trade in manufactured goods. In the production of foodstuffs, there has been an enormous increase during the war, for export purposes, in the output of processed products, such as bacon, cheese and poultry products. Equal dependence upon foreign markets during the transition period is likely to characterize the sections of agriculture and the processing industries engaged in this production. Thus the maintenance of employment and income in agriculture and other primary industries and in manufacturing will continue to rest on the policy of exports and high employment at home.

(1) Prior to the war, Canadian requirements in machine tools, in a great many chemicals and in many manufactured goods were imported from Britain and the United States and were paid for by exports of newsprint, wheat and other foodstuffs and non-ferrous metals.

(2) "Given fair competitive conditions in world markets after the war, the Canadian machine tool industry might find large enough volume of sales at home and abroad to make it possible to keep this new Canadian industry going on a sound basis". (Report, Advisory Committee on Reconstruction, Ottawa, 1943.)

(3) Proposals of the Government of Canada, Dominion-Provincial Conference on Reconstruction, Ottawa, August, 1945.

One important phase of Canadian post-war export trade, namely, that with the United Kingdom (which has been, by and large, Canada's best customer)⁽¹⁾ will have a vital bearing on the maintenance of Canadian production and employment in manufacturing. During the war only 30 per cent of Canadian war production was used by Canadian forces at home and abroad; the remainder was allocated to the needs of the allies notably the United Kingdom and the United States. Exports to Britain (as to the other United Nations) increased greatly while purchases from her declined. During the war, Britain's exchange position with other countries became difficult. A billion dollar gift in 1942, followed by Mutual Aid⁽²⁾, met her trade deficits on Canadian account and kept up the volume of Canadian exports to Britain (and high levels of production and employment in Canada).

Now, however, the United Kingdom finds herself in a position where it may be difficult to continue the pre-war volume of imports from Canada without a change in the volume and the direction of her exports.⁽³⁾ Canada therefore may have to buy more from Britain than before the war or, if no other arrangements are reached, she may suffer a decline in the demand for many of her staples by which the economy of both Western and Eastern Canada have been sustained.

-
- (1) In 1937 Britain took 40 per cent of Canada's total exports: 80 per cent of the exported dairy products, 75 per cent of the wheat, 65 per cent of the copper, 50 per cent of the aluminum and 50 per cent of the exported flour and lumber.
 - (2) Expenditures under the Mutual Aid appropriation on war supplies (munitions and military supplies including ships and foodstuffs and farm products) to Britain totalled \$1,442,056,000 over the period May 20, 1943 - March 31, 1945.
 - (3) To meet the cost of essential imports of food and raw materials, "Britain, in the past, sold abroad a considerable amount of her own production (her "visible exports") and relied, too, on money that she received in payment for shipping and other services and as interest on British investments overseas (her "invisible exports")". Today, as the result of the war, Britain's means of paying partly for her post-war imports through "invisible exports" have been greatly reduced. "A large part of her assets abroad have been sold to meet the cost of the war. Through war purchases and expenditure on the fighting services, she has incurred heavy indebtedness abroad ... Her income from shipping may also be reduced. It is obvious that - from absolute necessity - her "visible exports" will have to be greatly increased ... To meet the cost of essential imports, while facing the loss in pre-war "invisible exports", Britain will have to increase exports of merchandise 50 per cent by volume over the 1938 level." (Britain's Foreign Trade, British Information Services, New York, April, 1945).

In 1937 Canada imported 18 per cent of her total imports from Britain - \$147 million of merchandise - of which textiles accounted for \$53 million or 35 per cent and iron and steel and their products for \$30 million or 20 per cent. Canadian imports are likely to rely heavily on the products of these two industries. However, Canada's productive capacity has increased tremendously during the war with a large part of the increase taking place in the production of iron and steel and their products while there has also been expansion in the textile products industry. Britain's chief export items now compete with Canadian production of these items. The problem of how to maintain employment in Canada's domestic industries as well as a high volume of exports in both staple and manufactured products (which in turn may be conditional on buying in similar volume from Britain goods which now compete with the products of Canadian domestic industry) therefore requires earnest consideration.

Wartime developments then may exercise a great influence upon the pattern of Canadian commodity trade in the years ahead. A change in the relative importance of the items comprising Canadian export trade can be expected with manufactured products making a larger contribution to the total volume and value of export trade and hence to the national level of employment and income.⁽¹⁾ A possible change in the relative composition of Canadian import trade also can be expected as the result of Canada's increase in industrial productive capacity. Imports have consisted largely of manufactured goods but now with Canadian factories in a position to produce many of the things previously imported, raw materials and semiprocessed items may become more important relatively as items in the volume and value of import trade. This change will probably affect Canadian import trade with the United States to the greatest extent since that

(1) Increased Canadian exports of manufactured goods will meet, of course, with competition from the manufactured goods of those countries which like Canada have become much more industrialized during the war. As against this, it may be noted that important wartime developments in technology will strengthen Canadian industry, to some extent, in competition with that of other countries, or remove differentials that may have existed before the war. Furthermore, during the war, skilled workers were channelled into war manufacturing while other large numbers of workers developed a capacity for skilled work as indicated by wartime shifts between occupations. Hence this skilled labour force can be expected to contribute to quality production of Canadian manufactures at competitive price levels. And finally with the purchasing power of several countries materially increased as a result of the war, their people may turn to the type of goods which Canada produces rather than those previously supplied by Germany and Japan.

country is **by** far the most important source of supply - 60 per cent of total Canadian imports coming from the United States in 1937 largely in the form of manufactured goods. It would appear therefore that Canadian economic life will now rest to a lesser extent than before the war "on the specialized exploitation of a few natural resources whose products are exchanged in the international market for ... manufactures, raw materials and services".

Canadian manufacturing industries are planning to expand and produce many new lines, including at least one hundred major products never before manufactured in Canada.⁽¹⁾ For example, end-products range from inter-city buses, prefabricated houses, glass fabrics and plastic products to a myriad of household articles. The development of the toy industry in Canada gives promise of an end to reliance on foreign countries. Primary materials and components of manufactured articles include ball and roller type bearings; polymer flake, an important material for nylon fabrics; special type yarns; synthetic resins; titanium dioxide for all types of paints. The list of new products includes medicines and chemicals as well as many types of plant machinery and equipment never before made in Canada. New processes also are being developed. For example, a western chemical company will extract starch and glucose from wheat, while an Ontario company plans to make medicines almost entirely from raw materials originating from other Canadian firms.

(1) The following information is obtained from applications to the Minister of Reconstruction for a Certificate of approval of special depreciation under the provisions of Order in Council P.C. 8640 of November 10, 1944.

II. THE PROBLEM PRESENTED

1. Purpose of Study

A study of the nature of the change in the industrial structure of the economy and in the location of industry is useful because the assumption may be made that there will be some tendency toward the pre-war pattern of employment. Wartime conditions have increased the volume of industry and changed its location. During the war some industries have increased relatively much more than others; some have actually declined in numbers. There has been establishment of new industry - in some cases establishment of practically a new area. Transfers of population from one region to another have taken place.

With the end of the war these forces are lapsing: those industries unusually inflated by war are contracting. Civilian industries held in check by labour and material shortages and price control are expanding while there may be, perhaps, some change from war inflated areas to regions which have lost numbers.

Technological development, acquisition of capital assets, development of new skills and of new export markets may also lead to a substantial relative change of particular industries. Geographical transfer may be limited by the changed industrial structure of the country. It would appear therefore that with a higher level of employment during the war years, most industries should be operating at much higher levels in the post-war period than in 1939.

It is the purpose of this study to reveal the impact of the war on employment by indicating the changes in structure of the Canadian economy from the outbreak of war to mid-1944 when war employment had begun to taper off after reaching a peak in the last quarter of 1943. (Dates selected are September 30, 1939; and June 1, 1942; July 1, 1943 and July 1, 1944).

Two charts, together with a series of summary tables⁽¹⁾, have been prepared to accompany the study. The chart entitled "Wartime Industrial Employment, Selected Dates, 1939-1944" gives detailed information, by industry and by area, regarding employment figures for Canada at the base dates mentioned above. The chart entitled, "Wartime Expansion in Industrial Employment, Selected Dates, 1939-1944" utilizes the same industry and area classifications to

(1) The charts are to be found in the pocket on the inside of the back cover. The summary tables are to be found in the Appendix, Page 51.

show the increase and decrease in Canadian employment from September 30, 1939 to June 1, 1942, July 1, 1943 and July 1, 1944 respectively, and also indicates the percentage of war employment as of July 1, 1943. The summary tables provide descriptive, factual background material for the reader and form the basis for further analysis.

2. Organization of Material

In order to meet the purpose for which the study was designed, an industrial and a geographical classification have been evolved. The Dominion Bureau of Statistics employs a very detailed industrial classification divided into 39 schedules which are subdivided into approximately 145 groups with a further subdivision into some 586 sub-groups. The industrial classification employed for this study is a modification of that used by the Dominion Bureau of Statistics and divides industry into 12 major groups containing some 59 industries, for the dual purpose of (a) indicating groups, sufficiently homogeneous in nature from the view point of the use of the product, in enough detail so that knowledge of the behaviour of the group gives all the necessary information and yet does not give so much detail that one becomes lost in a mass of data, (b) emphasizing major wartime industries which necessarily include some normal peacetime industries more or less completely transformed for war production. Accordingly, certain industries such as the manufacture of luxury goods and small industrial groups of a miscellaneous nature which are of minor significance in the wartime economy and which have been included in the Dominion Bureau of Statistics classification have been omitted from the classification as drawn up for this study. However, the groups omitted are small quantitatively speaking, totals excluded being less than 3 per cent of the total reported by the Dominion Bureau of Statistics on July 1, 1944.

Inasmuch as the problems of the post-war period are presenting themselves largely in terms of individual cities and the smaller geographical zones, a geographical classification employing a system of geographical zones and emphasizing main urban areas has been drawn up with reference to the locational information of the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics, which divides Canada into 9 provinces and distinguishes some 112 urban centres and 9 "rest of province" localities. The present classification has divided Canada into 87 areas comprising:

57 major urban centres

21 main industrial zones

9 "rest of province" localities.

All urban centres listed, with the exception of Charlottetown, P.E.I., contain 1,000 or more salaried and wage employees within their bounds and separate figures are shown for each area.

Each zone has been given a descriptive title which is not in standard use and which serves only to indicate its general location. Zone totals are exclusive of figures for urban centres. "Rest of province" items are self-explanatory.

3. Scope of Study

All statistics compiled for this study except those on war employment are based on material obtained from the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. Material with reference to actual war employment figures and percentages of reporting manufacturing plants as at July 1, 1943, has been made available by the Economics and Statistics Branch of the Department of Munitions and Supply. In this instance war employment has been defined as employment connected with: (a) Contracts with any of the Dominion, United Kingdom or United Nations Governments or any official agency thereof; (b) Subcontracts from a war contractor or on orders for component parts and materials to be used on war production or construction.

The Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics publishes monthly surveys of employment composed of returns from employers (14,668, July 1, 1944; 16,000, April 1, 1945) for the purpose of providing a monthly index of employment. The coverage includes all industries other than agriculture, fishing, trapping and domestic service and reports on all firms recording 15 or more employees, with minor exceptions.⁽¹⁾ A table comparing the total number of wage-earners in Canada, by industry, on the Census date, June 2, 1941, with the number of wage-earners covered by the Monthly Survey of Employment for

(1) Firms having been recorded as reporting 15 or more employees at any given time are included in the monthly survey, regardless as to whether or not the number of employees reported is below 15.

June 1, 1941, together with related percentages is given below:

TABLE 1. - PERCENTAGE OF COVERAGE, BY INDUSTRY,
OF THE BUREAU'S EMPLOYMENT SURVEY

Industry	Wage-earners employed June, 1941		Column (b) as a % of Column (a)
	(a) 1941 Census (June 2)	(b) Monthly Survey (June 1)	
Manufacturing	914,753	873,318	95.47
Logging	77,459	46,928	60.58
Mining	85,847	83,148	96.86
Construction	166,600	131,765	79.09
Transportation	242,417	194,023	80.04
Trade, Service & Finance	512,757	258,697	50.45
Industries included in Monthly Survey	1,999,833	1,587,879	79.40
Industries not included in Monthly Survey (agriculture, domestic services, etc.)	693,286	-	-
Total All Industries	2,693,119	1,587,879	58.96

Source: Compiled from the Dominion Bureau of Statistics bulletin entitled "An Estimate of Total Employment on October 1, 1943, in Industries Reporting to the Monthly Survey of Employment".

When estimating the extent of the coverage of employment in industries reporting to the Bureau's Monthly Survey of Employment, the size of the sample of employment recorded must be considered as it depends very largely upon the proportion of firms in each industry employing fifteen or more workers, since the survey does not generally include firms which employ less than fifteen persons. For example, the Monthly Survey showed 873,318 employees in manufacturing or 95.5 per cent of the total wage-earners at work in manufacturing on the Census date June 2, 1941, while the coverage in mining is estimated at 96.9 per cent. On the other hand, the 258,697 employees reported in trade, services and finance, represent only 50.5% of the total wage-earners at work in those industries as shown by the 1941 Census. The major part of this latter group is not covered due to the fact that it does not generally include firms which employ more than fifteen persons. So too, coverage is less complete in logging and construction in which employment in small units is an important proportion of the whole.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

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Summarising the data shown in the table it may be stated that the Bureau's Monthly Survey of Employment for June 1, 1941, covered 80% of the total wage-earners employed at the date of the Census, June 2, 1941, in the industries included in the Monthly Survey. If the totals for excluded industries are added, the total coverage of the Monthly Survey will be seen to be about 60% of the 1941 Census total for all industries. However, with the exception of the armed forces and agriculture, groups having the most important changes in employment are included. The degree of change in these other groups may be appraised by reference to Table 4.

III. NATIONAL EMPLOYMENT TOTALS IN WARTIME INDUSTRIAL EXPANSION

1. Man-power Distribution During the War

The effect of the war upon employment was both greatly to increase the numbers gainfully occupied, and to bring about substantial occupational and regional shifts to meet war needs. The combined needs of the armed forces and war industries not only brought about the employment of a considerably larger number of persons over the level of 1939, but resulted in a substantially larger number being gainfully occupied than would have been the case even at high levels of peacetime employment. The growth of the labour force in war industry and of the armed forces⁽¹⁾ was the result of the absorption of new groups of workers and of the withdrawal of workers from other industries. This extensive growth was effected by the transfer of persons from the following sources:- workers in civilian manufacturing industry; male farm workers; workers in construction; the ranks of the unemployed; the normal additions to the labour force due to the natural growth of population (the total natural increase amounting to 572,000 and the added labour supply to about 300,000 during the war period 1939-1944); retired workers and those who postponed retirement; students; married and other women (farm women and homemakers not on farms) who in ordinary times would not have sought gainful employment.

This transfer is shown below in Tables 2 and 3:

Table 2.- ESTIMATED MAN-POWER DISTRIBUTION IN CANADA

14 Years and Over

(In thousands)

Population Class	June 1, 1939	June 1, 1944
Total civilians employed	3,683	4,232
Less civilians employed in war industry	-	1,055
Civilian employment in civilian industry	3,683	3,177
(a) Non-agricultural industry	2,473	2,177
(b) Agriculture (males)	1,210	1,000

Source: Compiled from "Estimated Man-Power Distribution in Canada", prepared by the Research and Statistics Branch, Department of Labour, Ottawa, October 29, 1944. The figure for civilians employed in war industry is a later revision.

(1) The increase in employment of 1,326,000 people, including the armed services, between June 1, 1939 and April 1, 1945, meant that 56 per cent of the population of working age (14 years of age and over) were gainfully occupied at the latter date as compared with 45 per cent in 1939.

Table 3. - SOURCES OF CHANGES IN ARMED FORCES AND
WAR INDUSTRY (EX. AGRICULTURE)
June 1, 1939 - June 1, 1944
(In thousands)

Population Class	Number
Decline in civilian non-agricultural, non-war employment	296
Decline in agriculture (males)	<u>210</u>
Total	506
Decline in number of students	192
Decrease in unemployed	687
Natural increase of working force	298
Additional women in industry and people out of retirement	<u>154</u>
Total	1,829
Add armed forces, June 1, 1939	<u>13</u>
Equals armed forces and wage, salary workers in non-agricultural war employment June 1, 1944	1,839

Source: Compiled from "Estimated Man-Power Distribution in Canada", prepared by the Research and Statistics Branch, Department of Labour, Ottawa, October 29, 1944. The estimate of the number of students and unemployed was prepared by the Directorate of Economic Research, Department of Reconstruction.

Changes in total employment, including those in the armed forces, may be seen in Table 4. Of interest is the decline of 170,000 in agriculture, despite a particularly great increase in agricultural production. The contribution made by young people and by women may be seen in the decline in the number of students and in the "all others" group - which includes homemakers not on farms. Table 4 shows that the wartime expansion in manufacturing employment was made possible by large increases in the hiring of women. These increases did not take place to a great extent in the period 1939-1941, but the years 1941-1943 showed an increase of approximately 263,000 women in war and civilian non-agricultural industries. As the war progressed and the armed forces expanded, the number of men employed began to fall off and women began to provide a large proportion of the increase in manufacturing employment. Of the increase from June 1, 1939 to June 1, 1944 in the number gainfully occupied, 774,000 were accounted for by the increase in the number in the armed forces. The reported industries, for which detailed analysis is made in the accompanying charts, accounted for a further increase of some 679,000⁽¹⁾. Thus it may be seen that the major portion of those industries in which increase in employment is of importance are covered.

(1) For a summary of the increases in employment in the reported industries over the period 1939-1944, see Appendix, Page 61, Table X.

TABLE 4. - ESTIMATED MAN-POWER DISTRIBUTION IN CANADA - 14 YEARS AND OVER
(In Thousands)

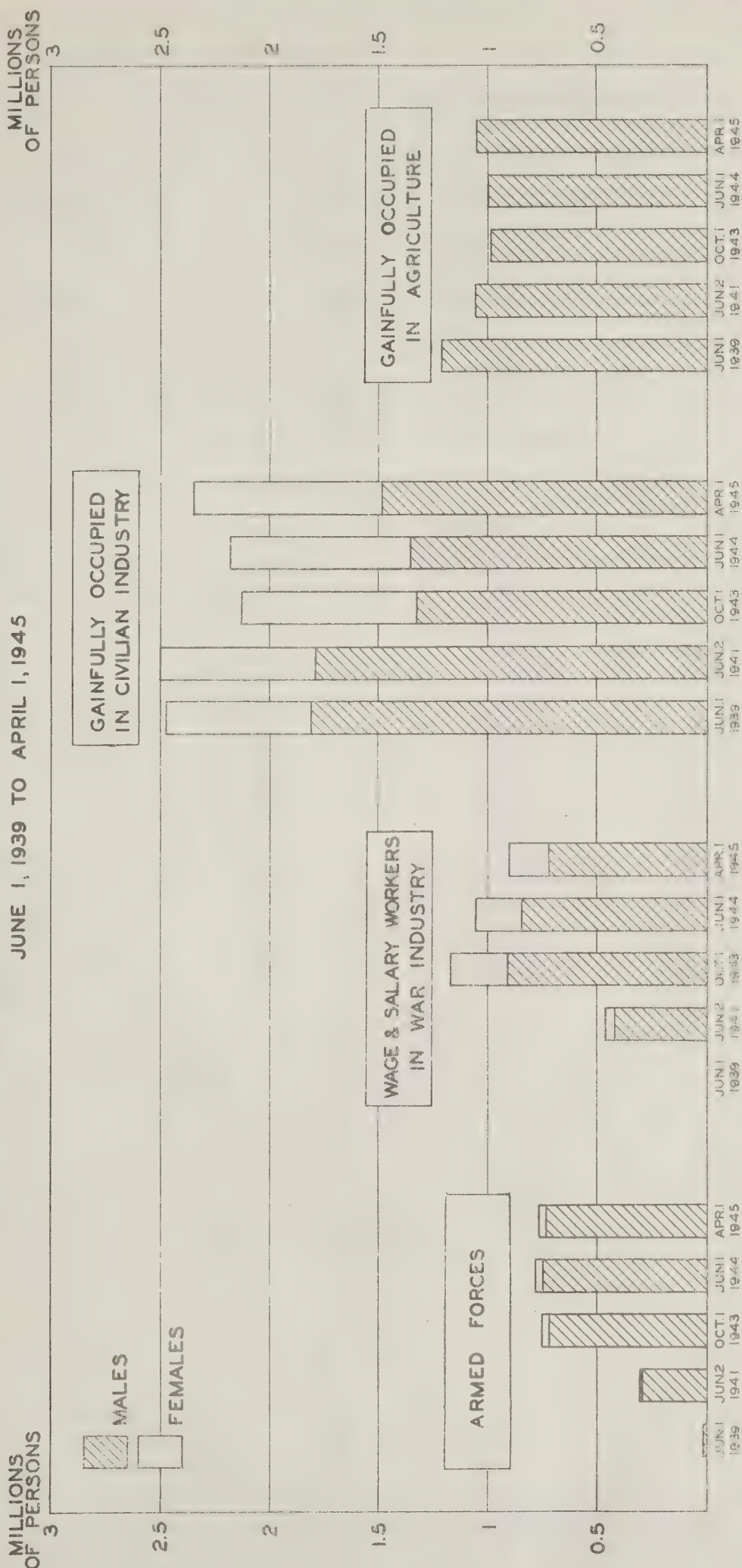
Population Class	June 1, 1939				June 2, 1941				June 1, 1943				October 1, 1943				June 1, 1944				April 1, 1945				July 1, 1945 (7)						
	Males		Females		Total		Males		Females		Total		Males		Females		Total		Males		Females		Total		Males		Females		Total		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
TOTAL POPULATION, 14 YEARS OF AGE AND OVER	4,259	4.000	8,259	100.0	4,385	4.130	8,515	100.0	4,503	4.258	8,761	100.0	4,513	4.284	8,797	100.0	4,540	4.325	8,865	100.0	4,567	4.382	8,949	100.0	8,979	100.0					
Total in Armed Forces or Gainfully Occupied (1)	3,030	663	3,693	44.7	3,570	746	4,316	50.7	3,887	1,029	4,916	56.1	3,938	1,091	5,029	57.2	3,947	1,069	5,016	56.5	3,938	1,081	5,019	56.1	5,005	55.7					
1. A. Armed Forces (1)	10	—	10	—	305	1	306	3.6	701	27	728	8.3	722	31	753	8.6	748	36	786	8.8	725	35	763	8.5	720	8.0					
2. Gainfully Occupied-Total (2)	3,020	663	3,683	44.6	3,265	745	4,010	47.1	3,186	1,002	4,188	47.8	3,216	1,060	4,276	48.6	3,199	1,033	4,232	47.7	3,210	1,046	4,256	47.6	4,285	47.7					
1. Non-agricultural industry - Total	1,810	663	2,473	29.9	2,209	745	2,954	34.7	2,236	1,002	3,238	36.9	2,231	1,060	3,291	37.4	2,199	1,033	3,232	36.8	2,200	1,046	3,246	36.3	3,245	36.1					
(a) Wage and salary workers in war industry (3)	—	—	—	—	420	40	460	5.4	870	230	1,100	12.6	905	261	1,166	13.3	844	211	1,054	11.9	715	186	901	10.1	686	7.6					
(b) Wage and salary workers in civilian industry	1,440	543	1,983	24.0	1,429	589	2,018	23.7	1,066	662	1,728	19.7	1,021	689	1,710	19.4	1,035	712	1,747	19.7	1,158	747	1,905	21.3	2,092	23.3					
(c) Employers, own accounts and no pays (4)	370	120	490	5.9	360	116	476	5.6	300	110	410	4.6	305	110	415	4.7	320	113	433	4.8	327	113	440	4.9	467	5.2					
2. Agriculture-males only (5)	1,210	—	1,210	14.7	1,056	—	1,056	12.4	950	—	950	10.9	985	—	985	11.2	1,000	—	1,010	11.3	1,010	—	1,010	11.3	1,040	11.6					
Farm Women, 14-64 years of age	—	800	800	9.7	—	788	9.2	—	760	—	760	8.7	765	—	765	8.7	—	775	—	800	8.9	800	—	800	8.9	804	9.0				
III. Students	318	316	634	7.7	293	304	597	7.0	230	246	476	5.4	212	230	442	5.0	212	230	442	5.0	223	237	460	5.1	440	4.9					
IV. Unemployed (6)	911	2,221	3,132	37.9	169	111	280	3.3	46	29	75	.9	31	35	66	.7	38	24	62	.7	50	27	80	.9	78	.9					
V. All others - includes home- makers not on farms	—	—	—	—	353	2,181	2,534	29.8	340	2,194	2,534	28.9	332	2,163	2,495	28.4	360	2,210	2,570	29.0	353	2,237	2,590	29.0	2,652	29.5					

Sources: Research and Statistics Branch, Department of Labour, Ottawa. The above estimates are based on information obtained from the Dominion Bureau of Statistics and other official sources. Very little statistical information is available for domestic servants, agricultural males, farm women, and employers, own accounts and no pays. In these cases the estimates are subject to a possibility of considerable error, especially for dates furthest from the date of the Decennial Census (June 2, 1941).

- (1) Includes prisoners of war and persons missing but still on strength. Excludes persons enlisted but on leave and engaged in civilian occupations.
- (2) Does not include women gainfully occupied on farms or in farm homes, who are included in item 11. Does not include wage and salary workers who are temporarily unemployed owing to "No job" or "Lay-off".
- (3) Includes employment on direct and indirect war production and construction, and the war content of employment in ancillary industries. These figures were provided by the Economics and Statistics Branch, Department of Munitions and Supply.
- (4) "Own accounts" are persons who carry on their business without assistance of employees. "No pays" are mainly family workers receiving no fixed money payment.
- (5) Since it is impossible to measure statistically the amount of farm work done by women, all women residing on farms who here included except students, women 65 years of age and over and those gainfully occupied outside the farm.
- (6) In 1943, 1944, and 1945 the number of unemployed was accounted for almost entirely by persons temporarily out of work while moving from one job to another.
- (7) Male - female breakdown is not available. Estimates are subject to revision.

FIGURE 1 - ESTIMATED MAN-POWER DISTRIBUTION IN CANADA 14 YEARS OF AGE AND OVER

JUNE 1, 1939 TO APRIL 1, 1945



2. Employment in War Industry.

"It is generally considered that Canada reached its peak of war industry production in the fall of 1943"⁽¹⁾ when total employment in war industry also reached its peak at 1,166,000 on October 1, 1943. This meant that at that date 13.3 per cent of the total population 14 years of age and over, were employed either directly or indirectly on war work.

Changes in employment in war industry are indicated below in Table 5.

Table 5. - ESTIMATED WAGE AND SALARY WORKERS
IN WAR INDUSTRY
October 1, 1939 - August 14, 1945

Date	Males	Females	Total
October 1, 1939	115,000	6,000	121,000
April 1, 1940	161,000	10,000	171,000
April 1, 1941	393,000	38,000	431,000
June 2, 1941	420,000	40,000	460,000
October 1, 1941	515,000	78,000	593,000
April 1, 1942	705,000	145,000	850,000
April 1, 1943	878,000	237,000	1,115,000
June 1, 1943	870,000	230,000	1,100,000
October 1, 1943	905,000	261,000	1,166,000
April 1, 1944	814,000	229,000	1,043,000
June 1, 1944	844,000	211,000	1,055,000
October 1, 1944	765,000	229,000	994,000
April 1, 1945	715,000	186,000	901,000
May 8, 1945	710,000	178,000	888,000
(V.E.Day)			
July 1, 1945	548,000	138,000	686,000
August 14, 1945	480,000	120,000	600,000
(V.J.Day)			

Source: Statistics for October 1, 1939, June 2, 1941, October 1, 1941, June 1, 1943, October 1, 1943, June 1, 1944, October 1, 1944 are from "Estimated Man-Power Distribution in Canada" tables, prepared by the Research and Statistics Branch, Department of Labour, Ottawa. The estimates for April 1, 1940 - 1945 and for May 7, 1945 (V.E.Day) were prepared by the Directorate of Economic Research, Department of Reconstruction while the statistics for July 1, 1945 and for August 14, 1945 (V.J.Day) are from "War Employment in Manufacturing Industries" July 1, 1943 - July 1, 1945, report prepared by Economics and Statistics Branch, Department of Munitions and Supply.

(1) Part IV, Wartime Changes in Population and Labour Force, prepared by the Dominion Department of Labour for Health, Welfare and Labour, Reference Book for the Dominion-Provincial Conference on Reconstruction Ottawa, August, 1945. War industry differs from war manufacturing so that employment in war industry is the broader term and includes employment on direct and indirect war production and construction, and the war content of employment in ancillary industries such as logging, mining, transportation, power, etc., which could be directly charged to war requirements.

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Employment in war industry reached its peak on October 1, 1943 and then began to taper off as war production programs were gradually curtailed and then terminated. Cut-backs in production programs involved reductions of employment in the aircraft and shipbuilding industries, the iron and steel industry and in the manufacture of guns and small arms.

3. War Employment in Manufacturing Industries.

While all forms of total employment from September 30, 1939 to July 1, 1944 increased, the greatest expansion in employment occurred in manufacturing. As seen in Table 6, total manufacturing employment increased about 547,000 from 1939 to 1944 or 95 per cent, which constitutes 60 per cent of the total figure as of July 1, 1944. This represents a continuous increase in total manufacturing from year to year, although direct war manufacturing declined 1.7 per cent from 1943 to 1944 and "other manufacturing" showed an increase of 1.5 per cent.

Table 6. - WARTIME INDUSTRIAL EMPLOYMENT IN MANUFACTURING
AND OTHER INDUSTRIES GROUPS
September 30, 1939 - July 1, 1944

Manufacturing and Non-Manufacturing Industries	September 30 1939		June 1 1942		July 1 1943		July 1 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Direct War Manufacturing	180,950	15.4	534,430	30.9	640,371	34.9	617,246	33.3
Other Manufacturing	389,993	33.2	483,896	28.0	469,161	25.5	500,919	27.0
Total Manufacturing	570,943	48.6	1,018,326	58.9	1,109,532	60.4	1,118,165	60.3
Other Industries	604,434	51.4	710,772	41.1	725,721	39.6	736,769	39.7
Total Employment	1,175,377	100.0	1,729,098	100.0	1,835,253	100.0	1,854,934	100.0

Source: Special compilation based on analysis of reports to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics by employers with 15 or more employees. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services. For details by industrial divisions see Appendix, Page 52, Table I.

The greatest expansion in employment in the manufacturing industries during the war period took place in the group referred to as "Direct War Manufacturing" which is essentially the munitions and heavy industries group. With reference to Table 6, it is noted that this group expanded most rapidly during the period 1939-1942 (when employment increased from 180,000 to 534,000), with a continued rise in employment until it reached its peak in 1943 (when employment stood at 640,000). There was a decrease in employment in the direct war manufacturing group of some 23,000 employees from July 1, 1943 to July 1, 1944

(when employment amounted to 617,000). This may be attributed to the curtailment of the war program involving reduction of employment in certain industries such as shipbuilding, manufacture of guns, small arms, etc. The iron and steel industry also showed a decline in employment which may be attributed to the completion of defence projects. Further decreases were registered by May and July, 1945, the decrease for the latter date being the result of the end of the European war. These changes are shown in Table 7.

Table 7. - WARTIME INDUSTRIAL EMPLOYMENT - DIRECT WAR MANUFACTURING GROUPS, BY MAJOR CLASSIFICATIONS
September 30, 1939 - July 1, 1945

Industrial Division	Sept. 30 1939	June 1 1941	June 1 1942	July 1 1943	July 1 1944	May 1 1945	July 1 1945
	Number	Number	Number	Number	Number	Number	Number
Principal Iron and Steel Groups	61,147	107,085	128,151	138,212	133,254	125,549	125,211
Vehicle Production	55,670	131,350	192,996	260,382	264,762	226,398	218,986
Munitions, Chemicals and Non-Ferrous Metals	64,133	123,331	213,283	241,777	219,230	194,486	169,790
Total - Direct War Manufacturing	180,950	361,766	534,430	640,371	617,246	546,433	513,987

Source: The special compilation referred to in table 6. For details by industrial sub-divisions see table 8.

There was great disparity, however, in employment changes among individual industries within the group. Table 8 shows the trend of employment since 1939 in the various sub-divisions of the principal iron and steel and other direct war manufacturing groups.

Approximately half of the total increase in employment in the direct war manufacturing group (an increase of 436,000 on July 1, 1944 over September 30, 1939) occurred in vehicle production. In the manufacture of automobiles and trucks a complete conversion from civilian to war production was accompanied by an increase of 180 per cent in employment. The shipbuilding and aircraft industries expanded their employment 25 and 20 times respectively during the period.

Direct munitions of war showed increases on an unprecedented scale:

Guns, Shells and Bombs - an increase is shown in this group of 30,164 employees from 1939 to 1944.

Explosives - employment in this industry is recorded at 2,406 in 1939 and 28,712 in 1944, an increase of 26,306 employees.

Chemical Products - employment tripled from 17,023 in 1939 to reach a peak of 56,585 in 1943.

The magnitude of the employment expansion in these three industries is quite apparent and is to be specially noted for it is precisely within these groups that the greatest problems of post-war re-employment are occurring.

FIGURE 2 - WARTIME INDUSTRIAL EMPLOYMENT
DIRECT WAR MANUFACTURING GROUPS
BY MAJOR CLASSIFICATIONS
(SEPT. 30 1939 TO JULY 1 1945)

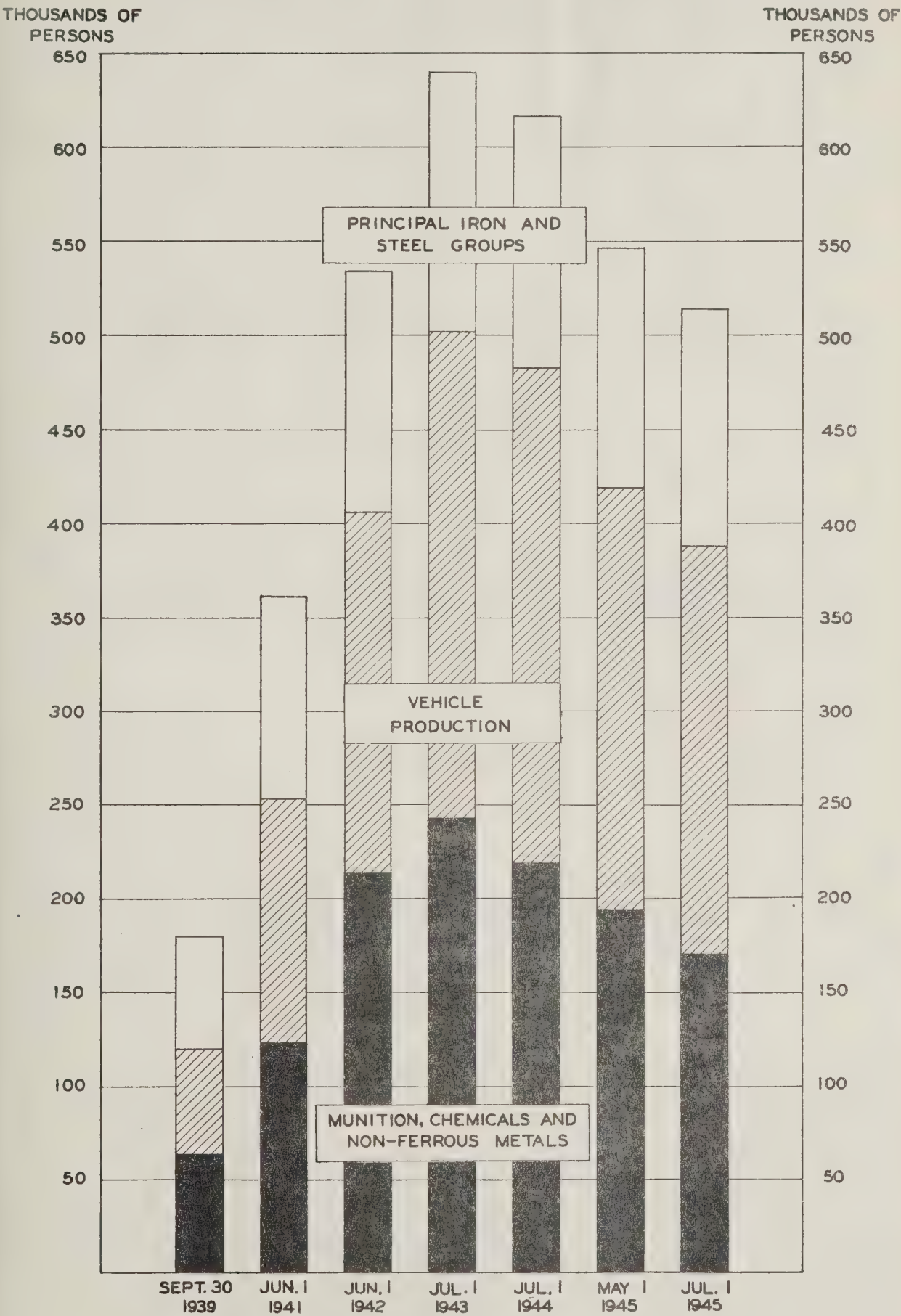


Table 8. - WARTIME INDUSTRIAL EMPLOYMENT - DIRECT WAR MANUFACTURING GROUPS,
DETAILED CLASSIFICATION
September 30, 1939 - July 1, 1944

Industrial Division	September 30, 1939	June 1, 1942	July 1, 1943	July 1, 1944
	Number	Number	Number	Number
<u>Principal Iron and Steel Groups</u>				
Pig Iron Production	61,147	128,151	138,212	133,254
Structural Iron and Steel	18,091	31,816	35,697	34,644
Foundries and Machine Shops	3,425	10,045	12,265	15,177
Machinery and Machine Tools	5,973	15,087	12,589	10,238
Agricultural Implements and Machinery	12,684	26,814	30,879	26,645
	4,302	11,712	11,452	10,448
Tools (hand)	2,978	8,853	9,347	7,801
Sheet Metal Products	5,348	12,009	12,120	14,564
Boilers, Engines, etc.	3,786	6,716	8,254	8,387
Heating Appliances	4,560	5,099	5,609	5,350
<u>Vehicle Production</u>				
Railway Rolling Stock and Repair Shops	55,670	192,996	260,382	264,762
Automobiles, Trucks, etc.	32,200	58,752	56,657	57,475
Aeroplanes	16,424	41,638	44,903	46,282
Shipbuilding	4,319	48,327	76,720	89,171
	2,727	44,279	82,102	71,834
<u>Munitions, Chemicals and Non-Ferrous Metals</u>				
Guns, Shells, Bombs	64,133	213,283	241,777	219,230
Explosives	47	53,559	42,311	30,211
Chemical Products (misc.)	2,406	35,484	32,381	28,712
Electrical Apparatus	17,023	37,800	56,585	48,435
Non-ferrous Metals Mfg.	18,507	34,588	43,279	48,764
	26,150	51,852	67,221	63,108
<u>Total (Direct War Manufacturing)</u>	180,950	534,430	640,371	617,246
<u>Total (All Industrial Employment)</u>	1,175,377	1,729,098	1,835,253	1,854,934

Source: The special compilation referred to in Table 6.

4. Changes in the Industrial Pattern

The "other manufacturing" group also showed differences in the degree of expansion among industries within the group. Industries most closely related to the war effort, such as foodstuffs, textiles and clothing, showed a greater expansion in employment than such industries as printing, publishing and paper. Employment in the textile and clothing group (excluding furniture) rose from some 124,000 in 1939 to 160,000 in 1942. This was the period of its greatest expansion since it was largely mobilized in the first two years of the war for the production of clothing and related requirements of the armed forces.

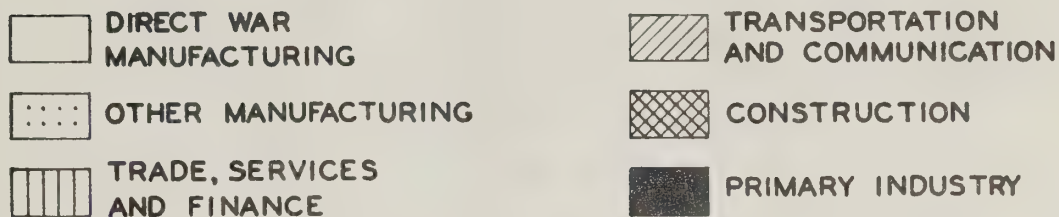
The "other industries" or non-manufacturing group as a whole showed a substantial increase in employment from 1939 to 1944 - 604,434 employees being recorded in this group in 1939, as compared with 736,769 in 1944, representing an increase of 132,335 or approximately 22 per cent.

Construction alone of all industries suffered a decline during the war. Up to 1943, construction was largely associated with the erection of hangars, barracks, building of airports and construction of wartime industrial establishments. Construction for civilian purposes declined very greatly. Only in the year 1944 was there a recovery in residential building, as materials and labour became available with the substantial completion of war construction.

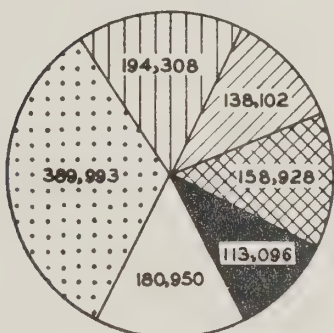
Employment in wholesale and retail trade increased from 1939 to 1942 by some 27,000 employees. It showed a decline in 1943, to rise again to its highest wartime level in 1944. An interesting comparison can be made with employment in manufacturing. In peacetime, the output of manufacturing industries finds its way to consumers through trade channels; during the war, a large proportion of all manufactured goods especially food and clothing going to the armed forces and allied countries was purchased directly from the manufacturers by the Government, not much going through retail and wholesale trade.

The primary industry, transportation and communication and trade, services and finance groups also showed increases in employment during the 1939-1944 period. The increases shown, however, would have been much greater had it not been for the great manpower shortage experienced during this period.

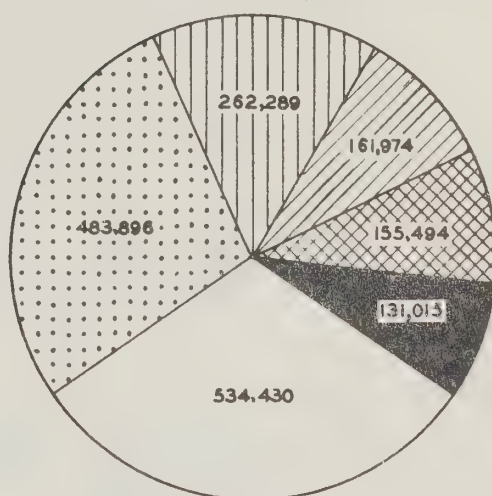
FIGURE 3 - WARTIME INDUSTRIAL EMPLOYMENT BY INDUSTRY DISTRIBUTION (SEPT. 30 1939 TO JULY 1 1944)



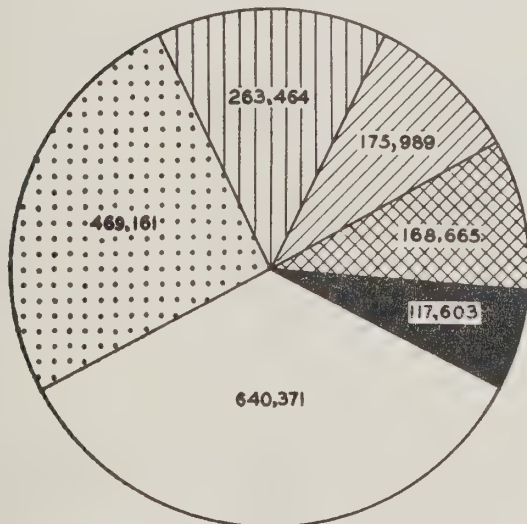
SEPT. 30, 1939
TOTAL 1,175,377



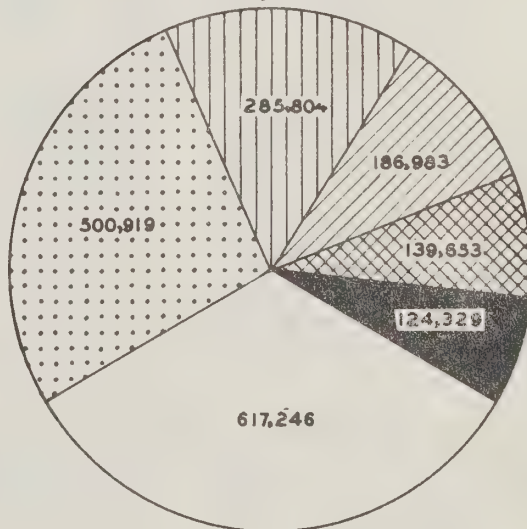
JUNE 1, 1942
TOTAL 1,729,098



JULY 1, 1943
TOTAL 1,835,253



JULY 1, 1944
TOTAL 1,854,934



COVERAGE INCLUDES ALL INDUSTRIES OTHER THAN AGRICULTURE,
MANUFACTURE OF LUXURY GOODS, DOMESTIC SERVICE AND
CERTAIN OTHER SERVICES.

IV. WARTIME CHANGES IN POPULATION⁽¹⁾

1. Interprovincial Migration

The great increase in the number of jobs available and the ability of workers to move to centres which offered new types of employment created by the war, resulted in transfers of employment from one field to another and from one region to another. Large migrations of workers occurred resulting in substantial shifts in the geographical distribution of the population. Table 9, based on the ration book count and showing the increase in population and provincial changes in population due to interprovincial migration, provides some idea of the very heavy internal migration of the civilian population of Canada between provinces which the war occasioned. By giving some insight into the general direction of the changes in the industrial labour force, the ration card data may possibly throw light on the re-employment problem from a provincial point of view.

Table 9 - NET POPULATION SHIFTS BETWEEN PROVINCES: COUNT OF RATION BOOK FOUR AS AN INDICATION OF POST-CENSAL MIGRATION
June 2, 1941 to April 1, 1944

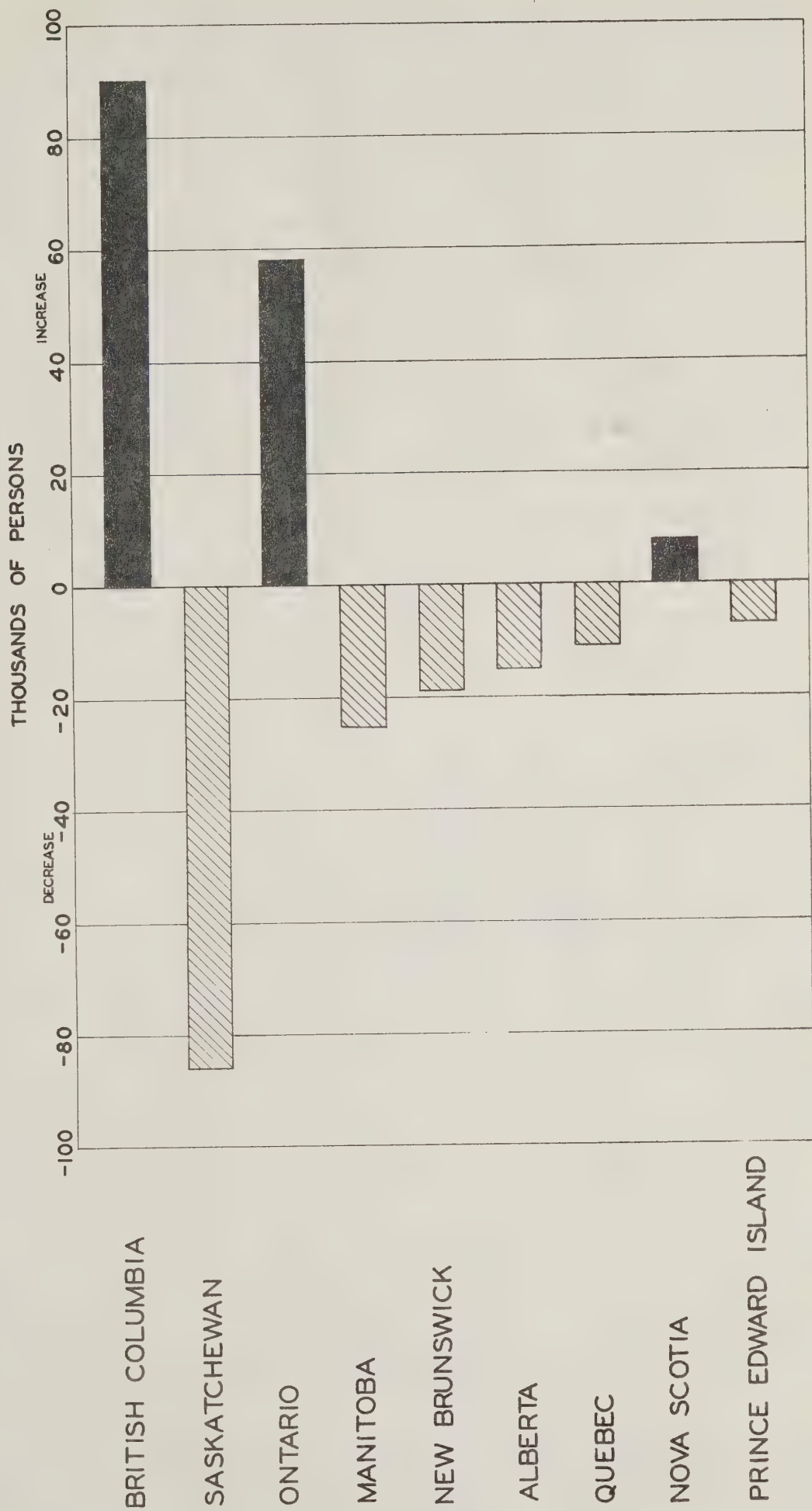
Province	Population (Census June/41) (1)	Natural Increase 1941-1944 (2)	Total Columns (1)+(2) (3)	Estimated Population (Ration Book Count) April 1/44 (4)	Estimated Net Civilian In-Migration 1941-1944 (5)
Prince Edward Island	95,000	3,000	98,000	91,000	- 7,000
Nova Scotia	578,000	24,000	602,000	610,000	+ 8,000
New Brunswick	457,000	22,000	479,000	460,000	- 19,000
Quebec	3,332,000	171,000	3,503,000	3,492,000	- 11,000
Ontario	3,788,000	108,000	3,896,000	3,954,000	+ 58,000
Manitoba	730,000	25,000	755,000	730,000	- 25,000
Saskatchewan	896,000	34,000	930,000	844,000	- 86,000
Alberta	796,000	34,000	830,000	815,000	- 15,000
British Columbia	818,000	22,000	840,000	930,000	+ 90,000
Total Canada (nine provinces)	11,490,000	444,000	11,934,000	11,927,000	- 7,000

Source: Social Analysis Branch, Dominion Bureau of Statistics, Ottawa.

For the country as a whole during the period 1941-1944 there was a net emigration of 7,000 persons. There was, however, a shift between provinces

(1) The descriptive material in this section is based largely on Part IV, Wartime Changes in Population and Labour Force, prepared by the Dominion Department of Labour for Health, Welfare and Labour, Reference Book for the Dominion-Provincial Conference on Reconstruction, Ottawa, August, 1945.

FIGURE 4 - NET POPULATION SHIFTS BETWEEN PROVINCES
 (FROM JUNE 2, 1941 TO APRIL 1, 1944)



of approximately 50,000 persons per year. The general direction of the exodus in Canada was mainly from the non-industrial regions to the industrial regions -- from the Prairies to Ontario and British Columbia -- which were the main recipients of interprovincial migration. Quebec contributed slightly to this migration while Saskatchewan was the chief contributor. "Four-fifths of the interprovincial drift has been from the Prairie provinces (which lost over 125,000), and over half from Saskatchewan." (1)

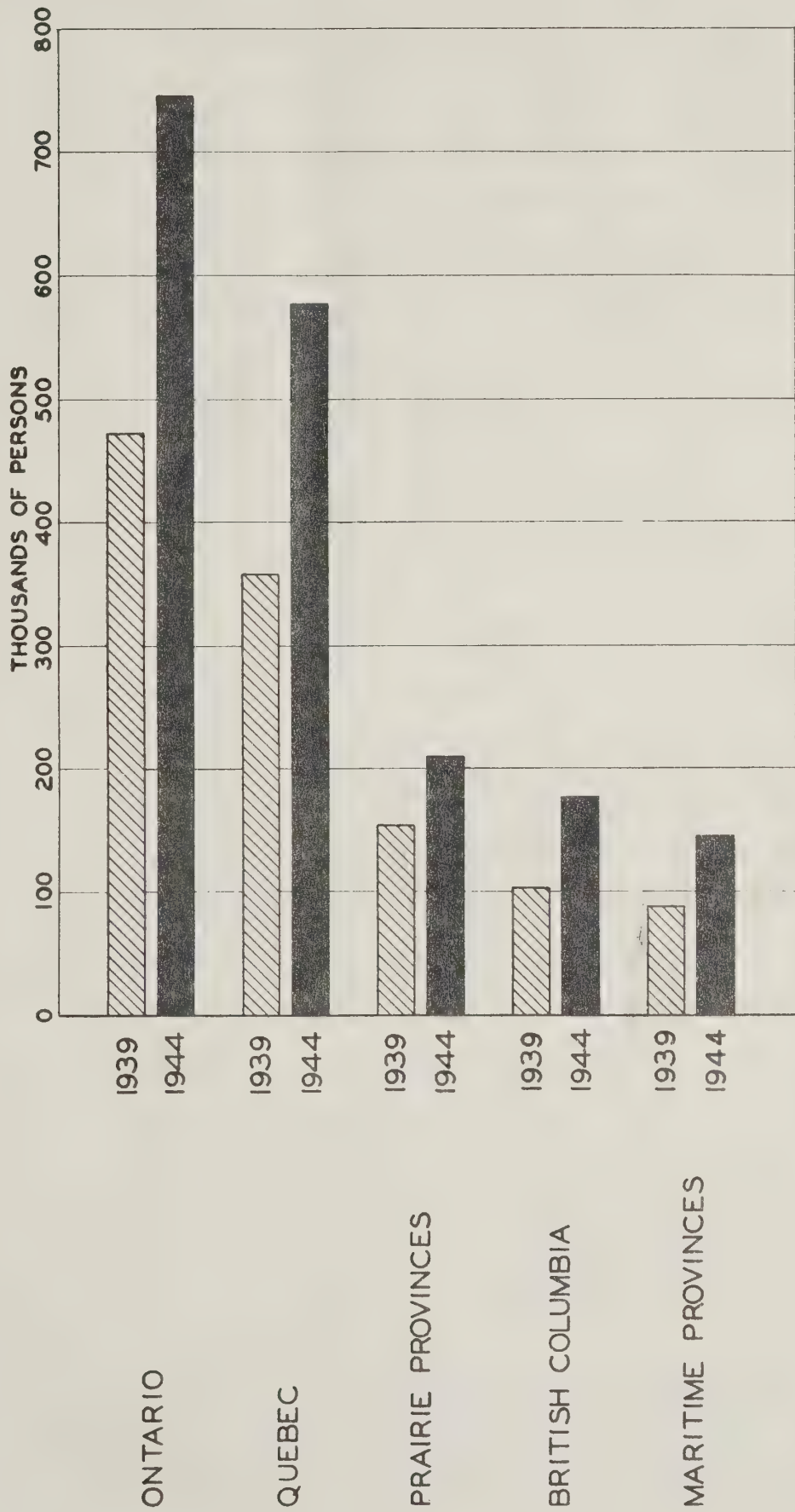
With the exception of Quebec, expansion in war manufacturing caused an inflow of population from the other provinces. In the Maritimes, Prince Edward Island and New Brunswick contributed population to Nova Scotia (particularly to Halifax) while the Prairies contributed to both British Columbia (which gained 90,000 for the period) and Ontario (which received 58,000). Quebec, on the other hand, due to her high rate of natural increase, was able to not only provide workers for her heavy program of war manufacturing but also to export them (11,000) to Ontario and Nova Scotia.

With reference to Table III of the Summary Tables (see Appendix, page 54) which shows provincial totals, a comparison of the relative increase in employment from one region to another and from one province to another may be made. All provinces showed increases in industrial employment on July 1, 1944 as compared to employment on September 30, 1939. The Maritimes showed an increase of 56,000, Central Canada (Quebec and Ontario), an increase of 494,000, the Prairies (despite migration of workers to Central Canada and to British Columbia) showed an increase of almost 56,000 while British Columbia showed an increase of 72,000. During the period 1939-1944, Ontario, Quebec, British Columbia, ranked highest in total employment. Ontario showed an increase of some 275,000 people, Quebec showed an increase of 219,000 and British Columbia ranked third with an increase of some 72,000 people. Prince Edward Island recorded the lowest increase in employment (653), while employment totals for Saskatchewan increased by only 5,477.

The wartime increase in the numbers of wage and salary workers in industries other than agriculture has been relatively uniform among the provinces. Although the war tended to accentuate only slightly the concentration of wage-earners in Ontario, Quebec and British Columbia, employment in war manufacturing,

(1) Op.cit.

FIGURE 5 - WARTIME INDUSTRIAL EMPLOYMENT
BY ECONOMIC REGIONS
(SEPTEMBER 30, 1939 AND JULY 1, 1944)



COVERAGE INCLUDES ALL INDUSTRIES OTHER THAN AGRICULTURE, MANUFACTURE
OF LUXURY GOODS, DOMESTIC SERVICE AND CERTAIN OTHER SERVICES.

however, was chiefly concentrated in the highly industrialized areas of Ontario and Quebec and to a lesser extent in British Columbia and Nova Scotia.

The munitions and explosives industries were heavily concentrated in Ontario and in Quebec⁽¹⁾ as was the aircraft industry although British Columbia and Manitoba also showed substantial employment in the aircraft industry. Shipbuilding was concentrated in British Columbia, Quebec and Nova Scotia. The mechanical transport industry was notably centred in Ontario. Thus Quebec, Ontario, British Columbia and Nova Scotia have the heaviest concentration of the inconvertible segments of war manufacturing.

2. Industrial Concentration in Major Urban Areas.

There has been a great movement of the population within regions from rural to urban areas with the chief shift toward the large cities -- the metropolitan centres. For the first time in the history of the country there is evident (except in British Columbia) an absolute decrease in the total population of counties which are predominantly "farm". In other words, such counties contributed not only their whole natural increase to the urbanized areas, but gave part of their pre-war population as well. Rural non-farm counties, except in British Columbia and Alberta, show the same trend. During the period 1941-44, 286,000 farm residents and 25,000 other rural non-farm dwellers have been uprooted and funnelled into urban areas. The result has been very rapid growth for metropolitan areas which gained 237,000 population due to in-migration.

The war speeded up the existing trends towards increased urbanization and the drift toward the industrialized sections of the country due to the greater job opportunities there as compared to the agricultural regions. It would appear that with a larger portion of the population now seeking wage-earning employment than in 1939, those workers who have migrated to another province during the war period are not likely to wish to return to their former places

(1) Those areas in Ontario and Quebec which have acquired these new wartime industries (munitions and explosives) have had the heaviest concentrations of employment and are now presenting a re-employment problem since these industries are of least importance in the peacetime economy.

of residence or will only return in small numbers over a period of time.⁽¹⁾

The wartime shifts in population will not be reversed to any appreciable extent and only then over a number of years. It is true that some of the growth in population in the metropolitan centres has been based on war manufacturing, an activity which is now terminating. But much of this growth in metropolitan population is a continuation of a steady pre-war trend. "If urban areas continue to experience moderate prosperity in the postwar period this shift of population is likely to continue. The industrialized centre of the country will likely continue to attract and absorb population from the distant regions."⁽²⁾ Concentration of the population in metropolitan areas will continue.

(1) This resistance to geographical re-transfer is due to a number of factors such as expectation of employment in civilian industry at high wages in the area in which the worker now resides and where he had been engaged in war work at high remuneration. Unwillingness to break up a newly-established home, the cost involved in such action and family ties may be other factors. Furthermore after six years of war the shifts of workers to new areas which took place in its early stages might be presumed to have some degree of permanence. It would appear that migration of workers from areas in which war industries are located "will not make a substantial contribution towards the solution of such unemployment problems, as may develop, at least in the early stages of the transition period." (Op. cit.)

(2) Op. cit.

V. PRINCIPAL INDUSTRIAL AREAS

The principal industrial areas are the metropolitan centres of the country. Since war employment, particularly in manufacturing, was chiefly concentrated in these centres, some of the effects of this concentration on a few of the metropolitan centres will be examined here. The metropolitan centres not only attracted workers in the provinces in which they were located but also drew employees from other provinces so that, as a consequence, their wartime growth has been relatively much greater than that of their respective provinces. This great increase in wartime employment in the leading centres was largely due to the existence of plant and equipment facilities which could readily be adapted to wartime production as well as to the concentration of more or less skilled labour in these localities.

1. Montreal

Employment in the Greater Montreal area rose from 170,000 at the outbreak of war to some 290,000 at July 1, 1944. This increase in numbers employed was greatest relatively in manufacturing. Thus a large concentration took place in the aircraft industry where employment rose from 1,700 in 1939 to reach a total of 33,000 in the summer of 1944. A similar trend occurred in shipbuilding where a 1939 labour force of 800 was increased to 13,000 over the period. To manufacture guns, shells and bombs, a new wartime industry was established which employed 3,000 workers on July 1, 1944. From a relatively small output at the outbreak of war, production in the machinery and machine tools group was accelerated so that by the end of the period, 3,000 more people were being employed over the pre-war level of 2,000. With high levels of employment also obtaining in the manufacture of chemical products, electrical apparatus and non-ferrous metals, there was a total of 124,000 persons employed in the direct war manufacturing group as a whole in the Montreal area in 1944, an increase of some 92,000 workers over the 1939 figure.

Major declines are now taking place in Montreal in aircraft production, shipbuilding and ammunition with many of the workers shifting to other jobs and other sources of employment. The problem here is to place a portion of this labour force in civilian industries at present experiencing a labour shortage and to retain the others in those direct war manufacturing groups now converting to production of peacetime counterparts. Montreal, however,

has well diversified manufacturing and other industries which should be able to take up the excess labour force. Thus textiles manufacturing - garments and personal furnishings - Montreal's largest peacetime industry - employed 31,000 people in 1944, an increase of only 6,000 over the 1939 level. Civilian production should be able not only to take up this excess force but will probably lead to further expansion and hence increased employment provided an adequate number of workers come forward to fill the positions available. A condition of general prosperity throughout the country will permit expansion in a very diversified range of activities in Montreal particularly in the basic industries of textiles, boots and shoes, railway rolling stock (which also sells in part in the export market), electrical goods and tobacco which sell in the national market. In addition the Province of Quebec is dependent upon export markets which determine the degree of prosperity in the province's major export industries. Prosperity in all these basic industries will in turn assure prosperity and a high level of employment in the trade, services and finance section of the economy of Montreal and in the manufacturing industries selling in the regional market. Thus the wide diversity of gainful occupations in the Montreal area means that there is likely to be expansion in some sections of its economy (trade, services, "light" industries) which will offset declines elsewhere (munitions, aircraft, heavy steel).

2. Toronto

In Toronto direct war employment was concentrated in the manufacture of aircraft, munitions, electrical apparatus, machinery and machine tools, non-ferrous metals and in shipbuilding. Employment in the aircraft industry rose to a high level with 19,000 being engaged in 1944 as compared to less than 1,000 at the outbreak of war. In the chemical products group, an increase of some 4,000 employees - from 5,000 to almost 9,000 - was recorded over the period. The creation of a new industry took place in the production of guns, shells and bombs, with resultant employment of 14,000 as of July 1, 1944. In explosives where employment rose to 4,000 in 1944, expansion was also tantamount to the creation of a new industry.

With production in the direct war manufacturing groups at an end, absorption of displaced employees by those industries which have lost numbers and hence are experiencing shortages (industries such as the garments and personal furnishings group) is taking place. In Toronto with its generally

high levels of employment in the services, trade and finance groups and with a diversified manufacturing industry, the problem of re-employment should not prove as difficult as in other centres which do not offer so wide a range of employment opportunities. Maintenance of general prosperity throughout the country but particularly in Central Ontario will ensure an easy adjustment to peacetime conditions since Toronto industries, (with their heavy dependence on consumer goods) generally are more sensitive to prosperity in the immediate environs than they are to the export trade or to conditions elsewhere in Canada.

3. Vancouver

Direct war employment in Vancouver was chiefly concentrated in shipbuilding and in the aircraft industry. In shipbuilding employment rose from a negligible pre-war level to almost 20,000 in 1944 while in aircraft production employment rose from a similar negligible amount to some 10,000 at the same date. The re-employment problem here is one of absorption into civilian occupations of large numbers of men and women employed in the shipbuilding and aircraft industries. Neither of these industries will probably entirely disappear and hence certain numbers of workers will be retained. Nevertheless the reduction from war employment levels will be great and the problem of re-employment of displaced workers will remain.

On the other hand, alternative employment opportunities can be expected in Vancouver in transport, trade, services and construction, groups which will probably maintain employment above pre-war levels while enlarged employment in sawmills and in woods operations can be expected to arise outside the Vancouver area to meet the needs of reconstruction in Europe and house-building in Canada. Employment in sawmills and woods operations will involve a shift out of Vancouver. The question here is whether an adequate number of workers will come forward to fill the positions available in logging and mining.

4. Hamilton

In July, 1944 industrial activity was centred in the various divisions in iron and steel manufacturing in which group 11,000 were employed. This industry, however, has always been an important one in Hamilton, employment in 1939 being 6,000. Vehicle production showed its greatest activity in the railway rolling stock and repair shops group with an increase in 1944

of some 2,000 over pre-war employment of 800. In the manufacture of guns, shells and bombs a new industry was created employing over 3,000 workers at the end of the period. Employment in the manufacture of electrical apparatus doubled over the period from over 3,000 to some 7,000.

Thus in Hamilton as elsewhere the direct war manufacturing group showed the greatest expansion in employment, an increase of 15,000 over the pre-war level of 12,000 in the iron and steel, vehicle and non-ferrous metals groups, to bring employment to 27,000 on July 1, 1944. Of a total employment of 56,000, the percentage represented by the direct war manufacturing group was 49 per cent. Hamilton then is predominantly a manufacturing centre with emphasis on steel and steel-using industries. There is, however, a large and diversified textile industry while production of rubber and electrical goods, food and paper products is high.

Employment in the primary iron industry should be well maintained. The major re-employment problem arises within the secondary steel industry where there has been substantial employment in munitions based on iron and steel. A time-lag may be expected in reconversion to the production of boilers, agricultural implements, foundry products, hardware and tools for which an expanded market is indicated. Employment in secondary steel should then remain at a fairly high level. But the problem of re-employment of workers in the munitions group and in other heavy war industries exists. There is need for some redistribution of the labour force away from the secondary iron and steel group and into other manufacturing industries such as textiles, foods, rubber products and electrical goods manufacturing. In addition there is also need for some slight shift of emphasis away from manufacturing in the direction of the services group and construction.

5. Windsor

The economic well-being of Windsor depends predominantly upon activity in its automobile industry. Over the period 1939-1944, employment in the industry increased from some 8,000 to 23,000. The problem here is largely one of reconversion to production of the peacetime counterpart. Employment in the industry will probably not remain at its wartime level during this process but once reconversion is completed employment should continue at a high level provided general prosperity is maintained in the rest of the country. Reconversion in the automotive industry involves a

change from making war goods in the form of mechanical transport to manufacturing civilian items of the same general type - cars and trucks - but with marked differences in detail. In addition, other industries such as the manufacture of guns, shells and bombs and of chemical products experienced a fairly substantial expansion in employment due to the war. Thus in the manufacture of guns, shells and bombs, a new industry was created employing 1,000 workers in July, 1944 while in the manufacture of chemical products employment increased from 1,100 to 1,700 over the period. It will be necessary for industry in Windsor to become more diversified and for other manufacturing opportunities to develop in order to absorb these displaced war workers.

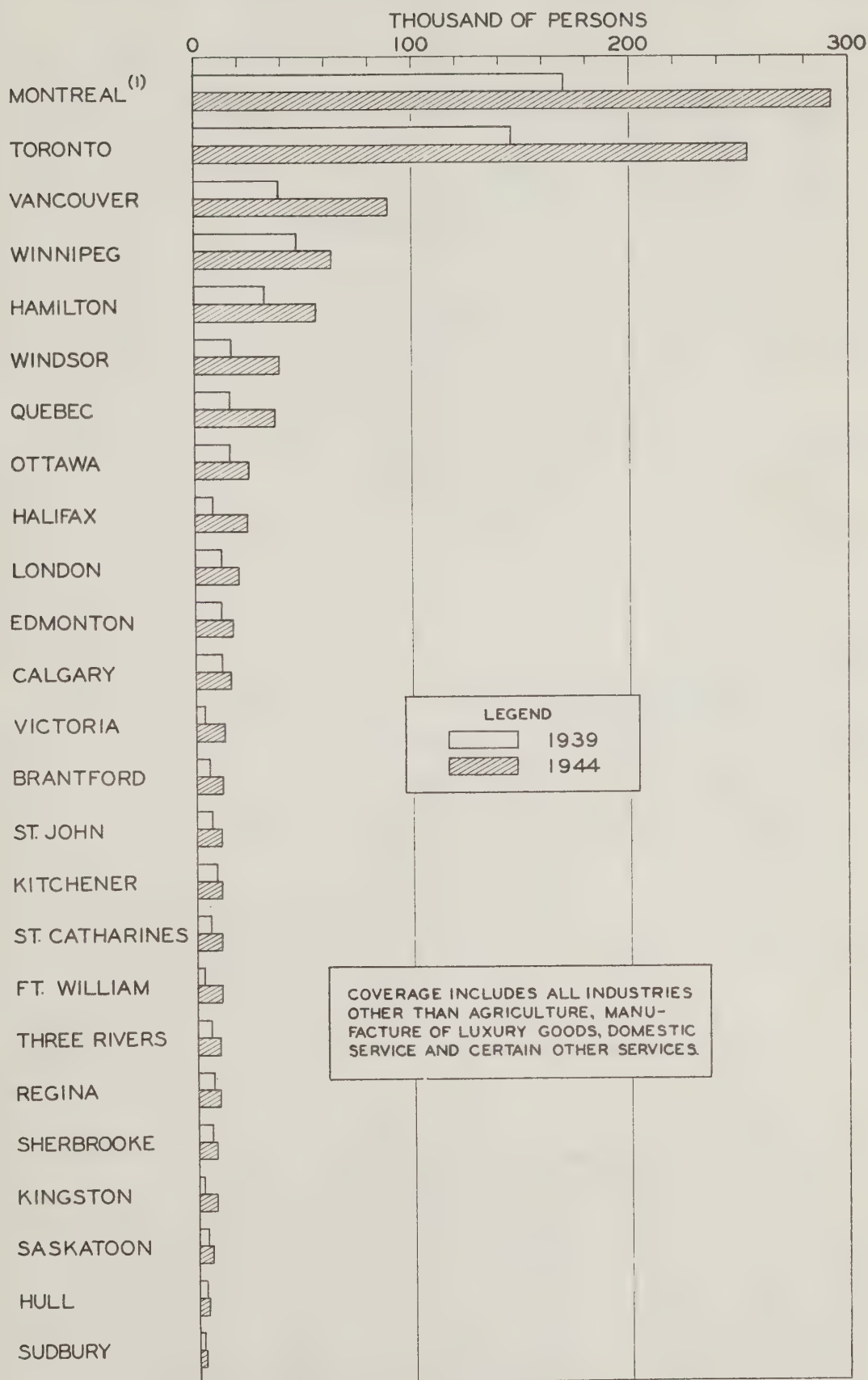
6. Quebec City

Wartime employment in Quebec was concentrated in explosives (small arms ammunition) - production facilities having no peacetime use - and in shipbuilding. Employment in explosives rose from some 600 in September, 1939 to almost 10,000 in July, 1944 while in shipbuilding the labour force increased over the period from a negligible amount to 7,000. There is need for transfer of workers from ammunition plants and from shipbuilding which will probably continue to employ numbers only sufficient to meet peacetime requirements. Absorption of some displaced workers into the pulp and paper industry, leather goods manufacturing and textile production should take place. However, the general re-employment situation on the whole will probably be one of more than average proportion in this area during the transition period. A very substantial revival of the tourist trade and services - normally the major employment outlets - is essential to avoid prolongation of the adjustment period.

7. Winnipeg

In Greater Winnipeg direct war employment was chiefly concentrated in the aircraft repair and explosives industries. In the aircraft industry employment rose from a negligible amount to 3,600 over the period while employment in explosives paralleled this rise to reach a total of some 2,700 in July, 1944. Some of the workers displaced in these industries will find work in manufacturing, services and trade - industries which have been producing goods for the armed forces but will now turn to marketing goods of the same general character to civilians. The problem here, however, is one of shifting

FIGURE 6-WARTIME INDUSTRIAL EMPLOYMENT IN MAJOR CITIES* SELECTED DATES 1939-1944



* INCLUDES ALL CITIES WITH POPULATION OF 30,000 AND OVER.

(1) INCLUDES OUTREMONT AND VERDUN.

the greater number of displaced workers to new and other sources of employment. With agriculture prosperous and with a fairly large volume of agricultural output to handle, Winnipeg should experience a relatively smooth period of adjustment.

The absorptive capacity of the economy during the present period of re-adjustment is well indicated in the case of many of the plants hitherto engaged on war contracts. In a large number of companies carrying out about 76 per cent of the war manufacturing the decline in war employment between May 1st and September 1st of this year was off-set to the extent of 51 per cent by an expansion of civilian employment. Such an expansion is significant in that in this segment of manufacturing are to be found the major problems of conversion and of non-convertible capacity; and also because a substantial shift from war work has been accomplished without the workers being obliged to change their place of employment. To the extent that such a shift takes place, dislocation is minimized.

The over-all figure of 51 per cent conceals interesting differences as between various types of war work. The decline in total employment has closely paralleled the decline in war employment in the manufacture of small arms, small arms ammunition, guns and ammunition filling, where production facilities have been recognized as so specialized to war use that peacetime developments would be limited. In shipyards and aircraft assembly plants, there has been little expansion in civilian employment to affect declines in war employment. On the other hand, from May to September, the total decline in employment in the automotive and instruments and communication industries amounted to only one third of the reduction in war employment in these industries. Only negligible reductions in total employment accompanied a substantial switch from war to civilian production in basic metal and other material industries and in the manufacture of industrial and agricultural equipment. An actual increase in total employment was experienced by the producers of clothing and other general stores despite a substantial curtailment of their war contracts. It is significant that this shift from war to civilian work took place within the same plants and during a period when shortages of both labour and materials have hampered the production of goods for civilian use.

VI. PROBLEMS OF SOME BASIC INDUSTRIES

1. Iron and Steel

Steel productive capacity has increased greatly in Canada during the war. The apparent supply of pig iron and the annual production of steel ingots and steel castings doubled between 1939 and 1942 while the production of alloy steel multiplied nearly five times in the same period. Expansion has also been marked in the number of electric furnaces and in continuous sheet and strip mills. Since 1939 Canada has become an important supplier of iron ore with the mines in the Michipicoten area being reopened and new resources at Steeprock explored and developed. The primary iron and steel industry and the secondary steel industry emerge from the war with production facilities more diversified than they were prior to the war and with the prospect of being able to supply a variety of shapes, forms and sizes formerly imported. In addition there is substantial deferred demand for the types of steel products produced before the war. The long-term outlook for the Canadian steel industry hinges on the prospects of the major users of its products - railways, automobiles, industrial machinery, buildings and highway construction.

It is doubtful, however, if Canada's civilian requirements for iron and steel will be adequate to keep all of the industry's facilities in operation after the transition period and export markets will no doubt continue to prove necessary.⁽¹⁾ After the initial post-war boom, then, it would appear that there will probably be somewhat lower employment in primary iron and steel and in secondary steel. Any reduction in output will have particularly serious effects on single industry steel towns like Sydney⁽²⁾, Amherst and Sault Ste. Marie.

2. Aluminum

Canada has become one of the world's largest producers of aluminum with production of aluminum ingot centred at the war-boom town of Arvida, in Quebec. Aluminum production expanded six times over the

(1) For the time being, demands in the export market (for reconstruction in Europe) will continue to be heavy until such time as the European iron and steel industry comes back into production.

(2) The Sydney area in Nova Scotia is one dependent on two major industries, primary iron and steel and coal. As such, it is particularly vulnerable (as are other single industry towns) to changes in prices, markets or technology.

period 1939 - 1943. A large cut in war employment seems anticipated and future production and employment will hinge on demand in the domestic market and on the competitive situation abroad. Were future production of aluminum not to be well maintained, a regional movement would seem necessary because there are few alternative civilian industries in Arvida — though there is absorptive capacity in the lumbering and the pulp and paper field in the Chicoutimi area — and hence few alternative employment opportunities in relation to the present population.

3. Nickel

Canada produces 90 per cent of the world's supply of nickel. The industry is located in the Sudbury - Copper Cliff district and because of its great use in armaments during the war, nickel production has been developed to the utmost. There is no reconversion problem as far as the physical changeover to peacetime production is concerned but with the termination of war contracts, production in nickel mining, smelting and refining has now been cut to one-half the wartime peak. Curtailments in employment have followed in the plants at Copper Cliff and Port Colborne. However, it can be reasonably expected that domestic civilian demand and export trade will provide more employment opportunities than are available during the reconversion period and this might involve between two-thirds and three-quarters of the wartime peak.

4. Textiles

The significant development in textiles has not been so much an expansion in capacity as the diversion of pre-war facilities from civilian to military needs. Although output increased enormously this was due almost entirely to the fact that the mills worked a very much larger number of days per annum than before the war. The need of the armed forces for uniforms, socks, tents and so on was so great that a considerable shortage of materials for shirts, sheets, upholstery and other civilian requirements developed. This backlog of civilian domestic demand in addition to the need for re-clothing Europe is likely to keep the mills operating at capacity for some time.⁽¹⁾ Also as rubber for automobile tires becomes available, the demand for cotton cord for linings will grow. The production of rayon will undoubtedly increase. The potential peacetime demand for textiles should then substantially replace the wartime demand. The industry's chief problem is the necessity of obtaining an adequate number of skilled

(1) It has been estimated that the primary and secondary textile mills will operate at capacity for nearly two years to satisfy consumer demands for essential merchandise.

workers to fill the positions available; another problem is current raw material shortages. The textile industry, especially if tailoring is included, is spread widely throughout the country but a few cities such as Sherbrooke and Three Rivers are predominantly dependent on this industry.

5. Chemicals

Expansion in the chemical industry was largely for direct war purposes, but it is believed that at least some of the plants, e.g., that producing nitrogen at Calgary, can be converted to supply peacetime markets⁽¹⁾. It is to be noted, however, that while considerable numbers of men may be needed to erect or convert a chemical plant, relatively few will be needed in its operation. Some of the plants are located in isolated points like Brownsburg and Nobel which will doubtlessly be virtually abandoned after the war. Other plants such as those at Valleyfield and Shawinigan Falls⁽²⁾ are situated in communities with more diversified economies and, in addition, the plants themselves produce goods for which there may be a peacetime demand.

6. Automobiles and Trucks

The fundamental problem in the automotive industry is that of conversion since the production of combat vehicles has largely taken place in the same areas which produced the counterpart before the war. There is no doubt that civilian demand for cars and trucks will be well maintained for the next four or five years (the backlog of demand alone should keep the plants operating at capacity for two or three years after conversion has been completed) but there may be unemployment during the change-over period. Besides the typical automobile centres of Oshawa and Windsor, other cities which make automobile parts, e.g., St. Catharines, will be affected by this change. By and large, however, there is likely to be relatively little serious unemployment in these automotive manufacturing centres.

(1) This nitrate plant is already exporting fertilizer to the United States.

(2) In Shawinigan Falls, for instance, the chemicals industry produces a very wide range of products, many of them readily adaptable to peacetime use.

A P P E N D I X

S U M M A R Y T A B L E S
O F
W A R T I M E I N D U S T R I A L E M P L O Y M E N T
S E L E C T E D D A T E S , 1 9 3 9 - 1 9 4 4 .

TABLE I. WARTIME INDUSTRIAL EMPLOYMENT - INDUSTRIAL SUMMARY
Selected Dates, 1939 - 1944.

Industrial Division	September 30, 1939		June 1, 1942		July 1, 1943		July 1, 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Principal Iron & Steel Groups	61,147	5.2	128,151	7.4	138,212	7.5	133,254	7.2
Vehicle Production	55,670	4.7	192,996	11.2	260,382	14.2	264,762	14.3
Munitions, Chemicals & Non Ferrous Metals	64,133	5.5	213,283	12.3	241,777	13.2	219,230	11.8
Direct War Manufacturing	180,950	15.4	534,430	30.9	640,371	34.9	617,246	33.3
Fuel & Power	28,562	2.4	29,801	1.7	30,263	1.6	31,145	1.7
Other Material Groups	94,496	8.1	135,435	7.8	126,658	6.9	134,178	7.2
Foodstuffs	96,403	8.2	102,177	6.0	108,312	5.9	124,088	6.7
Textiles, Clothing & Furniture	131,730	11.2	171,203	9.9	158,436	8.6	163,611	8.8
Printing, Publishing & Paper	38,802	3.3	45,280	2.6	45,492	2.5	47,897	2.6
Other Manufacturing	389,993	33.2	483,896	28.0	469,161	25.5	500,919	27.0
Primary Industry	113,096	9.6	131,015	7.6	117,603	6.4	124,329	6.7
Construction	153,928	13.5	155,494	9.0	168,665	9.2	139,653	7.5
Transportation & Communication	138,102	11.7	161,974	9.3	175,989	9.6	186,983	10.1
Trade, Services & Finance	194,308	16.6	262,289	15.2	263,464	14.4	285,804	15.4
Other Industries	604,434	51.4	710,772	41.1	725,721	39.6	736,769	39.7
TOTAL	1,175,377	100.0	1,729,098	100.0	1,835,253	100.0	1,854,934	100.0

Source: Special compilation based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services.

TABLE II. WARTIME EXPANSION IN INDUSTRIAL EMPLOYMENT - INDUSTRIAL SUMMARY
Selected Dates, 1939 - 1944.

Industrial Division	Increase or Decrease September 30, 1939-June 1, 1942		Increase or Decrease September 30, 1939-July 1, 1943		Increase or Decrease September 30, 1939-July 1, 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Principal Iron & Steel Groups	67,004	109.6	77,065	126.0	72,107	117.9
Vehicle Production	137,326	246.7	204,712	367.7	209,092	375.6
Munitions, Chemicals & Non-Ferrous Metals	149,150	323.6	177,644	277.0	155,097	241.8
Direct War Manufacturing	353,480	195.3	459,421	253.9	436,296	241.1
Fuel and Power	1,239	4.3	1,701	6.0	2,583	9.0
Other Material Groups	40,939	43.3	32,162	34.0	39,682	42.0
Foodstuffs	5,774	6.0	11,909	12.4	27,685	28.7
Textiles, Clothing & Furniture	39,473	30.0	26,706	20.3	31,881	24.2
Printing, Publishing & Paper	6,478	16.7	6,690	17.2	9,095	23.4
Other Manufacturing	93,903	24.1	79,168	20.3	110,926	28.4
Primary Industry	17,919	15.8	4,507	4.0	11,233	10.0
Construction	- 3,434	- 2.2	9,737	6.1	- 19,275	-12.1
Transportation & Communication	23,872	17.3	37,887	27.4	48,881	35.4
Trade, Services & Finance	67,981	35.0	69,156	35.6	91,496	47.1
Other Industries	106,338	17.6	121,287	20.1	132,335	21.9
TOTAL	553,721	47.1	659,876	56.1	679,557	57.8

Source: Special compilation based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services.

TABLE III. WARTIME INDUSTRIAL EMPLOYMENT - GEOGRAPHICAL SUMMARY
Selected Dates, 1939 - 1944.

LOCATION	September 30, 1939		June 1, 1942		July 1, 1943		July 1, 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Prince Edward Island	2,169	0.2	2,317	0.1	2,442	0.1	2,822	0.2
Newa Scotia	52,653	4.4	76,369	4.4	84,728	4.6	87,721	4.7
New Brunswick	33,792	2.9	49,226	2.9	55,195	3.0	54,248	2.9
Maritimes	88,014	7.5	127,912	7.4	142,365	7.7	144,791	7.8
Quebec	358,209	30.4	535,860	31.0	574,897	31.3	577,414	31.1
Ontario	479,850	40.1	718,487	41.6	738,679	40.3	746,101	40.3
Central Canada	829,059	70.5	1,254,347	72.6	1,313,576	71.6	1,323,515	71.4
Manitoba	66,774	5.7	91,007	5.3	93,464	5.1	96,775	5.2
Saskatchewan	37,405	3.2	39,018	2.2	39,870	2.2	42,882	2.3
Alberta	50,247	4.3	64,382	3.7	65,729	3.6	70,675	3.8
Prairies	154,426	13.2	194,407	11.2	199,063	10.9	210,332	11.3
British Columbia	103,878	8.8	152,432	8.8	180,249	9.8	176,296	9.5
Eastern Canada	917,073	78.0	1,382,259	80.0	1,455,941	79.3	1,468,336	79.2
Western Canada	258,324	22.0	346,839	20.0	379,312	20.7	386,628	20.8
CANADA	1,175,377	100.0	1,729,098	100.0	1,835,253	100.0	1,854,934	100.0

Source: Special compilation based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services.

TABLE IV. WARTIME EXPANSION IN INDUSTRIAL EMPLOYMENT - GEOGRAPHICAL SUMMARY
Selected Dates, 1939 - 1944.

LOCATION	Increase or Decrease September 30, 1939 - June 1, 1942		Increase or Decrease September 30, 1939 - July 1, 1943		Increase or Decrease September 30, 1939 - July 1, 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Prince Edward Island	148	6.8	273	12.6	653	30.1
Nova Scotia	24,316	46.7	32,675	62.8	35,668	68.5
New Brunswick	15,434	45.7	21,403	63.3	20,456	60.5
Maritimes	39,898	45.3	54,351	61.8	56,777	64.5
Quebec	177,651	49.6	216,688	60.5	219,205	61.2
Ontario	247,637	52.6	267,829	56.9	275,251	58.5
Central Canada	425,288	51.3	484,517	58.4	494,456	59.6
Manitoba	24,233	36.3	26,690	40.0	30,001	44.9
Saskatchewan	1,613	4.3	2,465	6.6	5,477	14.6
Alberta	14,135	28.1	15,482	30.8	20,428	40.7
Prairies	39,981	25.9	44,637	28.9	55,906	36.2
British Columbia	48,554	46.7	76,371	73.5	72,418	69.7
Eastern Canada	465,186	50.7	538,868	58.8	551,233	60.0
Western Canada	88,535	34.3	121,008	46.8	128,324	49.7
CANADA	553,721	47.1	659,876	56.1	679,557	57.8

Source: Special compilation based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services.

TABLE V. WARTIME INDUSTRIAL EMPLOYMENT - SUMMARY FOR MAJOR CITIES
Selected Dates, 1939 - 1944.

CITIES	September 30, 1939		June 1, 1942		July 1, 1943		July 1, 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Halifax	8,003	1.4	16,682	1.8	23,252	2.3	24,387	2.3
Saint John (1)	6,522	1.1	11,382	1.2	13,266	1.2	11,469	1.1
Montreal	169,693	28.8	253,132	27.1	284,094	27.6	292,660	27.8
Quebec	15,964	2.7	31,722	3.4	40,602	3.9	37,356	3.6
Three Rivers	5,750	1.0	6,577	.7	9,286	.9	9,984	.9
Sherbrooke	5,724	1.0	8,214	.9	7,975	.7	8,335	.8
Hull	2,671	.4	5,212	.6	3,878	.4	4,022	.4
Toronto	146,111	24.8	229,842	24.6	246,678	24.0	254,362	24.2
Hamilton	31,796	5.4	54,446	5.8	53,537	5.2	55,827	5.3
Ottawa	15,994	2.7	23,263	2.5	24,687	2.4	24,816	2.4
Windsor	17,113	2.9	37,207	4.0	40,160	4.0	38,617	3.7
London	11,800	2.0	15,291	1.6	17,127	1.6	19,784	1.8
Kitchener	8,992	1.5	11,221	1.2	12,412	1.2	11,191	1.1
Sudbury	1,761	.3	1,951	.2	1,896	.2	1,896	.2
Brantford	5,757	1.0	11,054	1.2	13,279	1.3	12,456	1.2
Fort William	2,797	.5	9,238	1.0	8,068	.8	10,627	1.0
St. Catharines	5,626	1.0	11,996	1.3	11,698	1.1	10,763	1.0
Kingston	1,849	.3	6,312	.7	7,909	.8	7,890	.8
Winnipeg	46,755	8.0	61,417	6.6	60,690	6.0	62,544	6.0
Edmonton	12,222	2.0	17,867	1.9	18,845	1.8	16,612	1.6
Calgary	12,455	2.2	16,073	1.7	15,734	1.5	16,485	1.6
Regina	6,696	1.1	8,833	.9	9,292	.9	9,886	.9
Saskatoon	3,519	.6	4,428	.5	4,786	.5	5,628	.5
Vancouver	39,205	6.7	70,975	7.6	88,467	8.6	88,938	8.5
Victoria	3,571	.6	9,763	1.0	11,904	1.1	13,332	1.3
Combined Major Cities	588,346	100.0	934,098	100.0	1,029,522	100.0	1,049,867	100.0

Source: Special compilation based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services. The major cities include all cities with a population of 30,000 and over.

(1) Includes Outremont and Verdun.

TABLE VI. WARTIME EXPANSION IN INDUSTRIAL EMPLOYMENT - SUMMARY FOR MAJOR CITIES
Selected Dates, 1939-1944

CITIES	Increase or Decrease September 30, 1939 to June 1, 1942		Increase or Decrease September 30, 1939 to July 1, 1943		Increase or Decrease September 30, 1939 to July 1, 1944	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Halifax	8,679	108.4	15,249	190.5	16,384	204.7
Saint John (1)	4,860	74.5	6,744	103.4	4,947	75.9
Montreal	83,439	49.2	114,401	67.4	122,967	72.5
Quebec	15,758	98.7	24,638	154.3	21,392	134.0
Three Rivers	827	14.4	3,536	61.5	4,234	73.6
Sherbrooke	2,490	43.5	2,251	39.3	2,611	45.6
Hull	2,541	95.1	1,207	45.2	1,351	50.6
Toronto	83,731	57.3	100,567	68.8	108,251	74.1
Hamilton	22,650	71.2	21,741	68.4	24,031	75.6
Ottawa	7,269	45.4	8,693	54.4	8,822	55.2
Windsor	20,094	117.4	23,047	134.7	21,504	125.7
London	3,491	29.6	5,327	45.1	7,984	67.7
Kitchener	2,229	24.8	3,420	38.0	2,199	24.5
Sudbury	190	10.8	135	7.7	135	7.7
Brantford	5,297	92.0	7,522	130.7	6,699	116.4
Fort William	6,441	230.3	5,271	188.5	7,830	279.9
St. Catharines	6,370	113.2	6,072	107.9	5,137	91.3
Kingston	4,463	241.4	6,060	327.7	6,041	326.7
Winnipeg	14,662	31.4	13,935	29.8	15,789	33.8
Edmonton	5,645	46.2	6,623	54.2	4,390	36.0
Calgary	3,618	29.0	3,279	26.3	4,030	32.4
Regina	2,137	31.9	2,596	38.8	3,190	47.6
Saskatoon	909	25.8	1,267	36.0	2,109	60.0
Vancouver	31,770	81.0	49,262	125.7	49,733	126.9
Victoria	6,192	173.4	8,333	233.4	9,761	273.3
Combined Major Cities	345,752	58.8	441,176	75.0	461,521	78.3

Source: Special compilation based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. The coverage includes all industries other than agriculture, manufacture of luxury goods, domestic service and certain other services. The major cities include all cities with a population of 30,000 and over.

(1) Includes Outremont and Verdun.

TABLE VII. WAR AND CIVILIAN INDUSTRIAL EMPLOYMENT - INDUSTRIAL SUMMARY
July 1, 1943.

INDUSTRIAL DIVISION	War Employment		Civilian Employment		Total Employment	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Principal Iron & Steel Groups	117,753	83.5	23,222	16.5	140,975	100.0
Vehicle Production	247,137	92.4	20,250	7.6	267,387	100.0
Munitions, Chemicals & Non-Ferrous Metals	213,156	89.0	26,357	11.0	239,513	100.0
Direct War Manufacturing	578,046	89.2	69,829	10.8	647,875	100.0
Fuel & Power	5,974	53.9	5,114	46.1	11,088	100.0
Other Material Groups	53,890	50.2	53,355	49.8	107,245	100.0
Foodstuffs	26,910	25.3	79,273	74.7	106,183	100.0
Textiles, Clothing & Furniture	56,854	34.6	107,426	65.4	164,280	100.0
Printing, Publishing & Paper	6,435	29.0	15,721	71.0	22,156	100.0
Other Manufacturing	150,063	36.5	260,889	63.5	410,952	100.0
Primary Industry(1)	21,307	72.4	8,109	27.6	29,416	100.0
Total Coverage	749,416	68.9	338,827	31.1	1,088,243	100.0
Other Industries not Covered(2)	-	-	-	-	747,010	-
TOTAL	-	-	-	-	1,835,253	-

Source: Special compilation (by courtesy of the Economics and Statistics Branch, Department of Munitions and Supply) based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. War Employment is defined as employment connected with (a) Contracts with any of the Dominion, United Kingdom or United Nations Governments or any official agency thereof, (b) Sub-contracts from a war contractor or on orders for component parts and materials to be used on war production or construction.

(1) Includes only Metallic Mining and Non-Metallic Mining other than Coal Mining.

(2) Not included are (a) Logging, (b) Coal Mining, (c) Construction, (d) Transportation and Communication, (e) Trade, Services and Finance.

TABLE VIII. WAR AND CIVILIAN INDUSTRIAL EMPLOYMENT - GEOGRAPHICAL SUMMARY
July 1, 1943.

LOCATION	War Employment		Civilian Employment		Total Employment	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Prince Edward Island	234	46.3	271	53.7	505	100.0
Nova Scotia	29,663	73.4	10,732	26.6	40,395	100.0
New Brunswick	9,173	58.7	6,448	41.3	15,621	100.0
Maritimes	39,070	69.1	17,451	30.9	56,521	100.0
Quebec	249,090	65.1	133,631	34.9	382,721	100.0
Ontario	348,280	70.5	145,886	29.5	494,166	100.0
Central Canada	597,370	68.1	279,517	31.9	876,887	100.0
Manitoba	23,860	60.3	15,177	39.7	38,237	100.0
Saskatchewan	5,603	62.6	3,344	37.4	8,947	100.0
Alberta	9,625	59.0	6,697	41.0	16,322	100.0
Prairies	38,288	60.3	25,218	39.7	63,506	100.0
British Columbia	74,688	81.8	16,641	18.2	91,329	100.0
Eastern Canada	636,449	68.2	296,968	31.8	933,408	100.0
Western Canada	112,976	73.0	41,859	27.0	154,835	100.0
CANADA (1)	749,416	68.9	338,827	31.1	1,088,243	100.0

Source: Special compilation (by courtesy of the Economics and Statistics Branch, Department of Munitions and Supply) based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. War Employment is defined as employment connected with (a) Contracts with any of the Dominion, United Kingdom or United Nations Governments or any official agency thereof, (b) Sub-contracts from a war contractor or on orders for component parts and materials to be used on war production or construction.

(1) For description of coverage see Table VII.

TABLE IX. WAR AND CIVILIAN INDUSTRIAL EMPLOYMENT - SUMMARY FOR MAJOR CITIES
July 1, 1943

C I T I E S	War Employment		Civilian Employment		Total Employment	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Halifax	9,862	84.2	1,849	15.8	11,711	100.0
Saint John	4,279	70.5	1,791	29.5	6,070	100.0
Montreal (1)	146,425	67.9	72,202	33.0	218,627	100.0
Quebec	20,822	74.7	7,035	25.3	27,857	100.0
Three Rivers	2,871	43.6	3,712	56.4	6,583	100.0
Sherbrooke	3,512	48.2	3,776	51.8	7,288	100.0
Hull	2,112	44.2	2,669	55.8	4,781	100.0
Toronto	107,544	67.0	53,047	33.0	160,591	100.0
Hamilton	33,760	73.0	12,511	27.0	46,271	100.0
Ottawa	5,837	59.6	3,959	40.4	9,796	100.0
Windsor	30,999	91.0	3,080	9.0	34,079	100.0
London	7,461	55.6	5,953	44.4	13,414	100.0
Kitchener	8,512	64.9	4,602	35.1	13,114	100.0
Sudbury	11,512	93.5	802	6.5	12,314	100.0
Brantford	9,764	78.2	2,723	21.8	12,487	100.0
Fort William	5,324	81.2	1,234	18.8	6,558	100.0
St. Catharines	8,769	86.0	1,430	14.0	10,199	100.0
Kingston	5,455	90.8	553	9.2	6,008	100.0
Winnipeg	19,527	57.9	14,185	42.1	33,712	100.0
Edmonton	4,811	65.9	2,490	34.1	7,301	100.0
Calgary	3,182	58.6	2,249	41.4	5,431	100.0
Regina	1,720	61.4	1,082	38.6	2,802	100.0
Saskatoon	843	54.9	691	45.1	1,534	100.0
Vancouver	46,405	85.9	7,642	14.1	54,047	100.0
Victoria	7,445	88.0	1,013	12.0	8,458	100.0
Combined Major Cities (2)	508,753	70.6	212,280	29.4	721,033	100.0
Industries not covered in Major Cities	-	-	-	-	327,894	-
TOTAL COVERAGE	-	-	-	-	1,048,927	-

Source: Special compilation (by courtesy of the Economics and Statistics Branch, Department of Munitions and Supply) based on analysis of reports by employers with fifteen or more employees to the Employment and Payroll Statistics Branch of the Dominion Bureau of Statistics. War Employment is defined as employment connected with (a) Contracts with any of the Dominion, United Kingdom or United Nations Governments or any official agency thereof, (b) Sub-contracts from a war contractor or on orders for component parts and materials to be used on war production or construction.

(1) Includes Outremont and Verdun.

(2) For description of industries covered, see footnotes (1) and (2) of Table VII.

TABLE X. WARTIME INDUSTRIAL EMPLOYMENT - DETAILED INDUSTRIAL SUMMARY
SELECTED DATES, 1939-1944

INDUSTRIES		September 30, 1939	June 1, 1942	July 1, 1943	July 1, 1944
"A"	Manufacturing				
1.	Principal Iron & Steel Groups	61,147	128,151	138,212	133,254
	Pig Iron Production	<u>18,091</u>	<u>31,816</u>	<u>35,697</u>	<u>34,644</u>
	Structural Iron & Steel	3,425	10,045	12,265	15,177
	Foundries & Machine Shops	5,973	15,087	12,589	10,238
	Machinery & Machine Tools	12,684	26,814	30,879	26,645
	Agricultural Implements & Machinery	4,302	11,712	11,452	10,448
	Tools (hand)	2,978	8,853	9,347	7,801
	Sheet Metal Products	5,348	12,009	12,120	14,564
	Boilers, Engines Etc.	3,786	6,716	8,254	8,387
	Heating Appliances Etc.	4,560	5,099	5,609	5,350
2.	Vehicle Production	55,670	192,996	260,382	264,762
	Railway Rolling-Stock, Repair Shops	<u>32,200</u>	<u>58,752</u>	<u>56,657</u>	<u>57,475</u>
	Automobiles, Trucks Etc.	16,424	41,638	44,903	46,282
	Aeroplanes	4,319	48,327	76,720	89,171
	Shipbuilding	2,727	44,279	82,102	71,834
3.	Munitions, Chemicals & Non-ferrous Metals	64,133	213,283	241,777	219,230
	Guns, Shells & Bombs	<u>47</u>	<u>53,559</u>	<u>42,311</u>	<u>30,211</u>
	Explosives	2,406	35,484	32,381	28,712
	Chemical Products (miscellaneous)	17,023	37,800	56,585	48,435
	Electrical Apparatus	18,507	34,588	43,279	48,764
	Non-ferrous Metals Manufacture (misc.)	26,150	51,852	67,221	63,108
4.	Fuel & Power	28,562	29,801	30,263	31,145
	Petroleum Products	<u>7,955</u>	<u>8,575</u>	<u>9,091</u>	<u>9,592</u>
	Coal, Coke & Gas Products	2,663	2,726	2,849	3,006
	Electrical Power	17,944	18,500	18,323	18,547

TABLE X. (CONTINUED)
WARTIME INDUSTRIAL EMPLOYMENT - DETAILED INDUSTRIAL SUMMARY
SELECTED DATES, 1939 - 1944

INDUSTRIES	September 30, 1939	June 1, 1942	July 1, 1943	July 1, 1944
5. Other Material Groups (Mostly Producers Goods)				
Pulp & Paper	94,496	135,435	126,658	134,178
Lumber (Rough & Dressed)	30,599	37,926	36,939	37,958
Intermediate Lumber Products	28,943	38,951	36,826	38,066
Rubber Products	5,359	15,775	8,727	8,722
Leather Products (Excluding Shoes)	14,329	16,241	16,228	20,714
Clay, Glass & Stone Products	1,797	7,646	8,728	8,501
Mineral Products, Non-metallic	11,008	15,181	14,983	15,913
	2,461	3,715	4,227	4,304
6. Foodstuffs	96,403	102,177	108,312	124,088
Vegetable Food Products	48,841	44,064	47,212	53,228
Animal Food Products	29,396	34,543	38,606	47,221
Beverages	10,010	12,992	12,028	13,438
Tobacco	8,156	10,578	10,466	10,201
7. Textiles, Clothing & Furniture	131,730	171,203	158,436	163,611
Cotton Goods	21,167	26,532	20,450	23,168
Woollen Goods	9,041	12,725	12,694	12,287
Silk & Artificial Silk	8,369	10,963	10,454	11,154
Hosiery & Knit Goods	20,861	23,604	21,670	22,195
Miscellaneous Textile Products	3,045	6,296	6,372	6,705
Garments & Personal Furnishings (Including Headwear, Furs, Shoes & Leather Furniture)	61,895	80,878	77,395	76,133
	7,351	10,205	9,401	11,969
8. Printing, Publishing, Paper	38,802	45,280	45,492	47,897
Printing & Publishing	27,718	30,007	29,676	31,314
Manufactured Paper Products	11,084	15,273	15,816	16,583

TABLE X. (CONTINUED)

WARTIME INDUSTRIAL EMPLOYMENT - DETAILED INDUSTRIAL SUMMARY
SELECTED DATES, 1939 - 1944

INDUSTRIES	September 30, 1939	June 1, 1942	July 1, 1943	July 1, 1944
"B" Other Industry				
1. Primary Industry				
Logging	113,096	131,015	117,603	124,329
Coal Mining	<u>33,988</u>	<u>50,128</u>	<u>44,403</u>	<u>52,437</u>
Metal Mining	25,179	25,326	24,389	26,377
Mining of Non-metallic Minerals (Incl. Coal)	43,843	44,609	37,707	34,463
	10,086	10,952	11,104	11,052
2. Construction				
Building N.E.S.	158,928	155,494	168,665	139,653
Highways & Aerodromes	<u>34,870</u>	<u>60,760</u>	<u>69,597</u>	<u>39,613</u>
Track Construction & Maintenance (Railways)	93,911	53,168	59,389	59,661
	30,147	41,566	39,679	40,379
3. Transport & Communications				
Railway Operations	138,102	161,974	175,989	186,983
Shipping & Water Transport	<u>67,053</u>	<u>75,534</u>	<u>82,172</u>	<u>84,985</u>
Air Transport	16,821	21,849	24,736	26,424
Streetcars, Cartage & Storage	1,083	2,277	3,544	4,677
Telephones	29,782	34,474	37,540	41,411
Telegraphs	17,547	20,839	20,353	21,954
	5,816	7,001	7,644	7,532
4. Trade, Services & Finance				
Wholesale Trade	194,308	262,289	263,464	285,804
Retail Trade	<u>33,436</u>	<u>38,592</u>	<u>38,634</u>	<u>44,421</u>
Hotels & Restaurants	98,231	120,170	118,392	128,933
Laundries & Personal Services	18,302	24,394	26,538	30,085
Finance	11,651	15,756	16,577	17,403
	32,688	63,377	63,323	64,962
TOTAL	1,175,377	1,729,098	1,835,253	1,854,934

TABLE XI. WARTIME INDUSTRIAL EMPLOYMENT - DETAILED GEOGRAPHICAL SUMMARY
SELECTED DATES, 1939 - 1944

AREA, ZONE OR REGION	September 30, 1939	June 1, 1942	July 1, 1943	July 1, 1944
<u>Prince Edward Island</u>	<u>2,169</u>	<u>2,317</u>	<u>2,442</u>	<u>2,882</u>
Charlottetown	712	818	813	990
Rest of Province	1,457	1,499	1,629	1,832
<u>Nova Scotia</u>	<u>52,053</u>	<u>76,369</u>	<u>84,728</u>	<u>87,721</u>
Amherst	408	2,857	3,417	2,955
New Glasgow & Trenton	1,568	4,178	4,391	3,155
Isthmus Zone	10,485	14,108	12,779	12,961
Halifax	8,003	16,682	23,252	24,387
Main Zone	6,954	9,097	12,664	12,177
Sydney	4,743	6,779	7,227	9,036
Cape Breton Zone	12,589	12,319	10,553	12,056
Rest of Province	7,303	10,349	10,445	10,994
<u>New Brunswick</u>	<u>33,792</u>	<u>49,226</u>	<u>55,195</u>	<u>54,248</u>
Bathurst Zone	3,680	5,240	5,464	5,507
Fredericton Zone	2,449	4,032	3,660	3,335
Saint John	6,522	11,382	13,266	11,469
Saint John Zone	4,878	5,535	8,358	7,668
Moncton	2,764	4,797	4,260	4,627
Moncton Zone	1,547	1,868	1,983	2,270
Rest of Province	11,952	16,372	18,204	19,372
<u>Quebec</u>	<u>358,209</u>	<u>535,860</u>	<u>574,897</u>	<u>577,414</u>
Hull	2,671	5,212	3,878	4,022
West Zone	14,255	22,913	23,036	21,202
Greater Montreal	169,693	253,132	284,094	292,660
S.W. Zone	25,324	52,892	47,438	47,243
Sherbrooke	5,724	8,214	7,975	8,335
S.E. Zone (Eastern Townships)	19,809	26,054	26,246	32,412
Three Rivers	5,750	6,577	9,286	9,984
St. Maurice Zone	12,148	16,006	15,577	13,127
Quebec	15,964	31,722	40,602	37,356
Quebec-Saguenay Zone	34,265	45,126	45,535	47,177
Rest of Province	52,606	68,012	71,230	63,896
<u>Ontario</u>	<u>470,850</u>	<u>718,487</u>	<u>738,679</u>	<u>746,101</u>
Fort William	2,797	9,238	8,068	10,627
Port Arthur	2,136	4,090	4,305	4,829
Sault Ste. Marie	4,512	7,169	7,410	7,080
Timmins	3,717	3,851	2,791	2,714
Sudbury	1,761	1,951	1,896	1,896
North Bay	1,574	1,717	1,868	1,833
Northern Zone	43,312	54,688	45,462	47,692
Windsor	17,113	37,207	40,160	38,617
Chatham	3,346	3,099	4,071	5,024
Sarnia	3,714	6,299	11,044	7,734
St. Thomas	1,647	2,378	2,617	2,551
London	11,800	15,291	17,127	19,784
Stratford	1,551	1,853	3,509	3,372
S.W. Zone	11,866	13,890	14,137	14,224
Kitchener	8,992	11,221	12,412	11,191
Guelph	4,137	4,864	5,034	4,577
Galt & Preston	3,932	6,091	4,875	5,385
Brantford	5,757	11,054	13,279	12,456

TABLE XI. - (CONTINUED)

WARTIME INDUSTRIAL EMPLOYMENT - DETAILED GEOGRAPHICAL SUMMARY
SELECTED DATES, 1939 - 1944

AREA, ZONE OR REGION	September 30, 1939	June 1, 1942	July 1, 1943	July 1, 1944
<u>Ontario (Continued)</u>				
Hamilton	31,796	54,446	53,537	55,827
St. Catharines	5,626	11,996	11,698	10,763
Niagara Falls	4,899	5,751	5,840	6,234
Welland	3,358	11,374	11,988	10,009
Peninsula Zone	19,002	22,905	22,605	21,934
Owen Sound	1,308	2,057	2,141	1,957
Orillia	1,411	1,979	2,330	2,174
Toronto	146,111	229,842	246,678	254,362
Oshawa	4,872	8,557	9,487	11,188
Lindsay	740	1,599	1,702	1,716
Peterboro	5,051	8,947	9,039	8,650
Central Zone	20,099	30,538	28,757	28,731
Pembroke	797	1,394	1,100	1,024
Belleville	1,113	2,948	2,753	2,585
Kingston	1,849	6,312	7,909	7,890
Brockville	1,076	1,698	1,572	1,682
Cornwall	3,461	3,686	3,809	3,667
Ottawa	15,994	23,263	24,687	24,816
East Zone	14,222	17,936	18,508	19,004
Rest of Province	54,401	75,308	72,474	70,302
<u>Manitoba</u>	<u>66,774</u>	<u>91,007</u>	<u>93,464</u>	<u>96,775</u>
Dauphin - Le Pas & Region	3,413	4,887	3,637	3,465
Winnipeg & Region	46,755	61,417	60,690	62,544
Rest of Province	16,606	24,703	29,137	30,766
<u>Saskatchewan</u>	<u>37,405</u>	<u>39,018</u>	<u>39,870</u>	<u>42,882</u>
Saskatoon & Region	3,519	4,428	4,786	5,628
Prince Albert & Region	882	2,064	1,503	1,690
Moose Jaw & Region	1,855	2,326	3,132	2,617
Regina and Region	6,696	8,833	9,292	9,886
Rest of Province	24,453	21,367	21,157	23,061
<u>Alberta</u>	<u>50,247</u>	<u>64,382</u>	<u>65,729</u>	<u>70,675</u>
Calgary & Region	12,455	16,073	15,734	16,485
Edmonton & Region	12,222	17,867	18,845	16,612
Rest of Province	25,570	30,442	31,150	37,578
<u>British Columbia</u>	<u>103,878</u>	<u>152,432</u>	<u>180,249</u>	<u>176,296</u>
Victoria	3,571	9,763	11,904	13,332
Nanaimo	1,277	1,046	1,198	1,102
Vancouver	39,205	70,975	88,467	88,938
New Westminster	3,246	5,477	5,587	6,030
S.W. Zone	25,081	26,760	21,355	25,524
Prince Rupert	190	1,667	2,136	2,049
Northern Zone	2,747	5,027	6,839	5,876
Central Zone	4,583	3,572	3,232	3,049
Mountain Zone	9,958	12,440	21,352	12,973
Rest of Province	14,020	15,705	18,179	17,423
CANADA - TOTAL	1,175,377	1,729,098	1,835,253	1,854,934

S E L E C T E D D A T E S 1939-1944

DEPARTMENT OF RECONSTRUCTION, OTTAWA
DIRECTORATE OF ECONOMIC RESEARCH

KEY

COVERAGE

ALL INDUSTRIES OTHER THAN AGRICULTURE, MANUFACTURE OF LUXURY
GOODS, DOMESTIC SERVICE AND CERTAIN OTHER SERVICES

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KEY

COVERAGE

ALL INDUSTRIES OTHER THAN AGRICULTURE, MANUFACTURE OF LUXURY
GOODS, DOMESTIC SERVICE AND CERTAIN OTHER SERVICES.

CHANGES OF LESS THAN 50 EMPLOYEES IN ANY CENTRE NOT SHOWN.

SEPT. 30th 1939 JUNE 1st 1942	SEPT. 30th 1939 JULY 1st 1944
SEPT. 30th 1939 JULY 1st 1943	PERCENTAGE WAR EMPLOYMENT JULY 1st 1943

☐ INCOMPLETE COVERAGE
☒ NO INFORMATION AVAILABLE
☐ NO WAR EMPLOYMENT

